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Off the Editor's Chest

IT IS EVERYWHERE WIDELY RECOGNIZED that the interests of the "producer" owning and operating a factory, mine, or farm may clash and often do clash with the interests of the consumer of his product. It is not so widely understood, however, that the interests of the producer as a worker in factory, mine, or on a farm may also be at odds with the interests of consumers.

Yet it should be clear to all that other countries have set up Labor governments and Labor dictatorships without advancing in the slightest the welfare of consumers. In fact, Labor dictatorships are essentially all-embracing monopolies which control the prices of goods and services and by virtue of their gargantuan, monopolistic character they have removed all right of appeal of the consumer, as it were, to other sources of supply or other means of production. Thus they have exaggerated all the evils for consumers which have long been associated with the relatively petty monopolies of the free-enterprise countries.

As between so-called Capital and Labor, the former is more likely to possess a wholesome respect for the interests of consumers than the latter. The producer who owns a factory, since finally he must depend directly upon the goodwill of the market, has a degree of sensitiveness at least to the needs and interests of consumers, whereas there is no economic necessity in theory or in fact for the working-producer or Labor to give serious weight to the rights of consumers. Consumers, when Labor is sufficiently organized, will be deprived effectively even of the right to buy one kind of product, say oil, in a free market when another kind, say coal, has had its price set by a Labor monopoly or by a Labor-Capital monopoly under government auspices. (The latter was in fact provided for in this country in the original Guffey Act held unconstitutional by the Supreme Court, and in the new Guffey Coal Act recently signed by the President.)

Business has learned in the hard school of experience how disastrously buyers' resistance to rising prices may affect its market. Business enterprisers, therefore, will often add rising costs of production to the consumers' bill, but (especially when not organized in trade associations with a price-raising drive) will regret having to do so and will try to reverse the trend by reducing costs of production in some other aspect whenever they can, —for sound reasons of self-interest. Labor, on the other hand, seems to have no reluctance whatever about pushing upward the prices which consumers must pay for their goods, by adding artificially to the costs of production, and such prices have often, as in the poultry and ice handling and dry-cleaning labor rackets, been practically without limit or restraint or any sense of concern for the loss of buying power which such uneconomic acts mean to the consumer least able to pay for such excesses.

In an era which witnesses a minority of Labor making great strides in powerful and dominating organizations, LABOR may be making gains, while the welfare of *labor* in general is being depressed, not advanced. All the sentimentalists to the contrary, a period of rising power for Labor is a period when the welfare of consumers is all too plainly at a disadvantage. Quite obviously, if *all* labor is organized to increase wages, no one can possibly win; and all dependents, even of Labor, and the unemployed will have a lower income in goods and services, on the average.

Increased production of constantly improved goods, sold at lower and lower prices, which is the *sine qua non* of consumers' well-being, is menaced today as never before by the program of organized Labor. There is no reason, aside from a belief in pat phrases of sentimentalists and fear of reprisal, why those who have the interests of consumers at heart should not be frank in stating this fact.

If Labor and Labor-controlled governments elect to proceed with reckless indifference to the effects of their policies upon the overwhelming majority of the population whose interests as consumers are paramount, they should not be surprised at the consumer's taking such steps as he can to defend himself from this exploitation. Labor and its governmental allies would be well advised to remember that the phrase, "Let the consumer beware," may yet be restated, "Beware of the consumer."

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Symbols used to indicate sources of data and bases of ratings:

A—recommended on basis of quality.

AA—regarded as worthy of highest recommendation.

B—Intermediate with respect to quality.

C—not recommended on basis of quality.

cr—information from Consumers' Research's own tests or investigations.

1, 2, 3—relative prices, 1 being low, 3 high.

36, 37—year in which test was made or information obtained by the staff of Consumers' Research.

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A Look at Modern Typewriters

FOR SEVERAL YEARS CR has intended to supply a comprehensive, up-to-date report on typewriters. It has, however, had difficulties in its efforts to find a consultant fully qualified, and at the same time free from commercial connection with the industry. The data here submitted are, therefore, CR's synthesis of information from several sources which, in the light of CR's own general technical knowledge and experience with typewriters, appear to be reliable for the purposes of ultimate consumers. No exhaustive engineering tests of trustworthy nature of typewriters, so far as is known, have ever been conducted, and such tests as have been carried on have been for commercial purposes and are regarded as unreliable for the consumer's guidance.

With the exception of the development of the Noiseless, there has not been any important improvement in office-size typewriters in the past thirty or forty years. In reading advertisements, which are always heralding tremendous innovations, the consumer should recognize that these are actually unimportant. Sales departments have a practice of whooping up wholly trifling additions or alterations as revolutionary changes, and the consumer must on this account learn to discount typewriter advertising heavily. An exception as to absence of far-reaching change is in the electric models, which in one case have been a total failure and in another are regarded as not worth serious consideration for any ordinary use.

Typewriter manufacturers usually offer to leave a machine in the home or office for a trial of a week or ten days before purchase; full advantage should always be taken of this trial period to give the machine varied and extensive use. Such a testing-out period is especially important with portables, and with early machines of a new model; it is wise however, never to buy a machine in the latter category since, with all makes, typewriters of new design will show difficulties that are later eradicated. Model numbers on typewriters are unsafe for guidance, since a typewriter with a given number may be extensively different in details from an earlier one of the same class.

It is suggested that, in making a selection, the purchaser have in mind any special types of work he is likely to do, and to give due weight to the adaptability of the machine to such work—card writing, stencil cutting, or tabulating, for example.

If special characters are desired, such as carat, paragraph, brackets, mathematical, engineering, or other technical symbols, foreign language accents, etc., these can be furnished in place of fractions and a few of the usual upper-case characters that may for some purposes be dispensed with. There is no extra charge for key substitutions on a new machine (barring perhaps the cheaper portables) if specified at time of ordering. If such substitutions need, however, to be made subsequently, a well-equipped typewriter repair shop can make the necessary changes of both type and corresponding keyboard symbols. The purchaser may be saved trouble in designing his own keyboard, by selecting one of the special keyboards offered by manufacturers out of their decades of experience with world-wide demand. Scores of these have been worked out for foreign language (including Arabic, Hindustani, Greek, and Hebrew), literary, scientific, and other professional uses. Remington has probably the widest selection of keyboard characters and arrangements.

Where economy of space is essential, one may wish to consider one of the type faces which occupy even less space than elite. For example, Sans Serif (available on *Remington* Noiseless) is a beautifully clear type which spaces 16 letters to the inch with 8 writing lines to the vertical inch. (Pica usually spaces 10 and elite 12, horizontally, with 6 writing lines to the vertical inch.) Small Elite, of Royal, spaces 12 letters to the inch horizontally, saving space by giving about 7.5 writing lines to the vertical inch. Conversely, extra large type can be had, e.g., Bulletin Gothic, of L. C. Smith, useful for display work in an institution, or Giant Primer, of Underwood, suitable either for that or for the very short letters of society correspondence where an appearance of distinction is desired. (It is likely that a machine equipped with extra large type will have a shorter working life on account of the heavier jar and vibration incident to the longer jump of the carriage for each stroke. As a rule, however, not so much work is expected of it, so that this may not be a practical objection.)

The following table, showing the approximate number of characters accommodated, single space, in a rectangle five inches wide by two inches high, gives an idea of the relative space economy of several of these different specimen types:

Giant Primer*	200
Pica	600
Elite	720
Small Elite	900
Sans Serif	1280

A variety of type styles is available, and booklets illustrating these and special keyboards can be obtained from the manufacturers on request.

Discounts to teachers have been discontinued, but they may still obtain discounts by ordering through their schools, where the school authorities are disposed to accommodate in this way. School discounts apply to portables as well as regular models. They are figured after allowance has been made for a trade-in typewriter. The usual school discount is 10%+10%, or 19%. Students may rent machines at special student rates; Remington offers students a rate of $3 a month ($4 is regular charge), or $7 for three months.

Trade-in allowances are uniform and small even on relatively new machines; e.g., the maximum allowance is $40 no matter how new the machine. Hence a new machine should never be bought for

* An *Underwood* portable equipped with Giant Primer can be obtained which is set for single and for one and one-half line space (instead of double). Some modern large machines can be adjusted to one and one-half line space in addition to the standard single, double, and triple.

use only on a piece of work of definitely limited duration; it will prove much cheaper to buy a used or rebuilt machine, or to rent.

All prices quoted in this report are list prices as of April 1, 1937, when a general advance went into effect.

Care, Servicing, Repairs

If a machine is properly used and cared for and has no latent mechanical defects, it should require servicing or repairs only rarely. An office model should, indeed, last a lifetime, but may need minor repairs in three to five years. (*Underwoods* of 1915 to 1925 were more sturdily built than those of more recent years, according to the best mechanics; the old "blind" *Remingtons*, and *Smith-Premiers*, practically never wore out but were retired because of obsolescence.) Brushing and oiling as directed in instruction pamphlets will usually keep a standard machine in satisfactory order. It may be a costly omission to neglect it. A cover should always be kept on a machine when not in use, to exclude dust, and eraser crumbs (rubber and emery) should not be allowed to accumulate. (A typewriter shipping box should always be preserved for possible later use; it can be duplicated by amateurs only with great difficulty.) A pitted platen (cylinder) will throw the type out of alignment; therefore, purchase of a new platen when the one in use becomes hard or shows signs of pitting, is an economy. If the machine is otherwise in good condition, it will probably be worth while to pay what the typewriter manufacturer asks for a cylinder (prices vary with the companies—$2.80 and $3.50 are quotations for eleven-inch cylinders; cylinders for portables cost less), rather than to buy a cheaper one which may not be true.

The owner of an old machine will do well to become familiar with its accessible parts and when trouble develops in its operation, inspect the screws; a loosened screw may be responsible. This often saves the inconvenience and expense of a call for servicing. (The screws, however, regulating the type-bar mechanism of a Noiseless are delicately adjusted and are not supposed to be tampered with.) Oiling (sparingly) may correct squeaks of parts which have moving contact.

It is suggested that if the consumer has occasion for any considerable servicing or repairs after expiration of the company's guarantee, he investigate local service shops. Sometimes competent mechanics outside regular agencies can be found who will service a machine satisfactorily and make minor repairs at a saving to the consumer. (But see note under *"Noiseless" Typewriters* on servicing of these machines.) It has been reported in years past that the Underwood and Royal services, in certain localities at least, were expensive and poor, the Smith and Remington reasonable and good. Subscribers are invited to send reports of their experiences with these services to CR.

"Standard" Typewriters

With the one exception noted, the typewriters rated *A* and *B* in this classification which embraces all office-size machines with hammer-stroke type-bar mechanism, are known to be durable, but relative durability over a span of years has not adequately been determined. Reports on this score are conflicting. It was impossible to determine an order of merit in the listings with which all experienced operators generally agree, as preference in typewriters is partly a subjective and highly personal matter—a matter of physique, temperament, and "what you have been used to." Each of these machines claims, and has, various more or less unique features and points of superiority, but the consumer may assume that unless for very exceptional applications these differentiating characteristics are insignificant rather than important or basic.

Listings are in alphabetical order.

A. Recommended

Royal 10. $115.50. Shift key lifts type-basket (a desirable arrangement) to obtain upper-case characters. Light action; the company now calls machines of this model the "Quiet Royal." All *Royals* do excellent type-work and are easy to operate.

L. C. Smith 8. $115.50. Ball-bearing type-bars. Quiet. The "feel" of the *L. C. Smith* action, which is light, is quite different from that of any other standard machine and is preferred by many doing rapid work; court reporters state that this make is used by a majority of the dictaphone operators transcribing testimony at high speed for long periods. In past years, *L. C. Smiths* have lost precision of alignment rather quickly, especially when good care has not been taken of machine. (See *Care, Servicing, Repairs.*) An *L. C. Smith*, if given fairly heavy use, will be more likely to be traded in or rebuilt for the sake of better alignment after 5 or 6 yrs.

Underwood 6. $115.50. One of the most durable machines on the market. But touch is heavy (the machine is, however, favored by many male operators—newspaper men and writers—in spite of, or because of, this feature); type-work, fair. Marginal stops in old-time position on a clearly visible, quickly accessible front scale is an outstanding convenience; but the paper bail which Underwood has recently adopted (for holding paper firmly against platen) in place of paper fingers, is a dubious "improvement."

B. Intermediate

Remington 11. $115.50. Lacks advantage of Noiseless feature but is otherwise identical in construction with *Remington Noiseless 10* selling for $135.50, and desirable for its general convenience. Action is much easier and quieter than Standard *Remington 16.* Carries major disadvantages of most Noiseless construction—see discussion in section on *"Noiseless" Typewriters.* A new model, durability undetermined (see listing of *Remington 10*). May prove later to warrant an *A* rating.

Remington 16. $115.50. All-around heavy-duty machine. Durability excellent; type-work fair. Marginal stops conveniently located on front scale. Heavy action, very noisy.

C. Not Recommended

Woodstock. Reported not to stand up well under heavy usage. Company was generous in giving high allowances (beyond those customary in typewriter industry) on old machines toward purchase of a new *Woodstock.* Used machine might be a good buy, if at exceptionally low price for its type and date.

"Noiseless" Typewriters—Office Models

(For "Noiseless" Portables, see *Portables*)

The "Noiseless" machine, which prints by pressure instead of a hammer-stroke, has come a long way. It is believed it may be the business machine of the future, superseding the "noisy" models much as the "visible" machines superseded the "blind" models, which are now extinct. More than half of Remington's production and nearly half of Underwood's are reported to be in Noiseless. (Remington's Noiseless patents expire 1938 and 1940, and then it is expected that all companies will be making machines on the Noiseless principle.)

Properly used, CR judges the Noiseless will be at least the equal of any standard machine, but for the purpose of these listings, "noiseless" and "standard" machines are not considered as strictly comparable, i.e., an *A*-rated Noiseless would not necessarily rate *A* in the non-noiseless group; there may be some disadvantages accompanying the Noiseless feature, which make it practically impossible to judge noiseless and non-noiseless machines by precisely the same standards. Some models, because of jamming of type bars in the hands of an inexperienced operator, are not suitable for the unschooled typist with an erratic touch; nor will any Noiseless be preferred by people with a heavy touch (men especially), who prefer to pound. Before purchasing, be absolutely sure your technique is adaptable to a Noiseless machine; it is not for "hunt and peck" users. In interested quarters, it is held that the office models, as now made, need no more attention from the repairman than the average standard machine, but CR is not yet in a position to confirm this observation. For satisfactory carbon work, special carbon paper should be used (this does not apply to *L. C. Smith* "Silent"). Such carbon can be secured from the typewriter companies or the large stationers and costs no more than the standard type. Some may advantageously be purchased with the machines. The so-called Noiseless machines, while by no means noiseless in fact, are far quieter than the standard models, even those which may be described as "quiet."

With some of the older Noiseless machines, e.g., *Remington Noiseless 6,* there is an especially bad tendency for the type bars to jam, requiring the operator to stop and disentangle them by hand, or better, to start them back into position by the touch of a pencil; or for the characters to crowd or spread when the operator's touch is at all uneven.

Since Noiseless is, relatively, a precision instrument, servicing should be done only by mechanics specially trained in that type. Any considerable amount of repairs, or rebuilding, is a factory job. This should be figured in buying, since after the first year servicing and repairing are, of course, at customer's expense. There is, however, ground for the belief that in the long run Noiseless may be quite economical in spite of its higher initial cost.

Listings are in alphabetical order.

A. Recommended

It is not at all certain that the following two machines are comparable in durability with those rated A in the Standard classification, but they are regarded as the best of the Noiseless typewriters. Both of the following *A. Recommended* machines are believed to be unsurpassed for quietness, lightness of touch, beauty of work, and general convenience.

Remington 10 Noiseless. $135.50. Difficulties with early machines of this model (put on market in March, 1933, and at that time less satisfactory in several important respects than the earlier No. 6) are now overcome.

Underwood Noiseless. $135.50. Made on the basis of Remington patents and believed to be similar to *Remington 10* in all important respects. *Underwood* machine judged equal to *Remington.*

B. Intermediate

Remington 6 Noiseless. $120.50. Manufacture discontinued; supply limited to those on hand at Remington agencies and to rebuilt machines. On account of tendency of type bars to jam, No. 6 requires an even touch. Especially in older machines of this model, tendency of type to crowd or spread makes it a dubious purchase. A *good* specimen in a rebuilt (costing around $76.50) would make an excellent buy; good ones are understood to be available.

Remington 8 Noiseless, Desk Model. $79.50. For small offices, professional men, and those who do not need the extra refinements of the heavy duty model No. 10. Compromise between heavy office machine and portable—has same mechanism as *Remington 7* DeLuxe Noiseless Portable (which see, under *Portables*), but larger case, longer carriage—its standard platen takes paper 11-in. wide. May be had with carrying case for $6 extra; with carrying case, weighs somewhat over 21 lb. Listed in *B* because of the delicate coordinations involved in this new type mechanism in compact form and because experience with it does not yet warrant an *A* rating.

L. C. Smith Silent. $135.50. Same mechanism as *L. C. Smith Standard 8.* Reduction in noise has been effected by, it is claimed, the use of a special platen with soft core and a special "dead" metal for case of machine. These features are so new that experienced-based advice is not available as to whether they may carry any disadvantages (of which several are conceivable). Information (from a commercially interested source) indicates that the silencing effect of this machine may not be permanent.

Portable Typewriters

(including Noiseless portables)

There are now on the market serviceable portable models, sturdy, with many of the conveniences of standard office machines. However, judging from CR's own experience with portables in the last few years, one should be pleasantly surprised if a small machine does not develop some annoying trouble in actual use over a period of a year or two, if not, indeed, within a week or two. Sometimes difficulties are manifest even in the demonstration machines in the salesrooms. It is believed that the purchase especially of an older portable, or of a new "junior" model (intermediate between a well-equipped portable and the "stripped" machine referred to in next paragraph), cannot be better than

a severe compromise, which may occasionally be tolerable (price and expected limited extent of use considered). The absence of a backspacer, for instance, would alone be sufficient to place a junior portable in *C. Not Recommended.* (No junior portables are here listed, as their lower price to the consumer can hardly compensate him for the disadvantages, mainly due to missing keyboard elements, which they involve [probably so they can be used as "leaders" or "bait" in advertising, to get customers into the store: "Whoosis portable typewriters, from $38.50," when good Whoosis typewriters begin at about $65]. In a word, though considerably cheaper, they do not represent good value unless a person is sure that he will not wish to resell the typewriter or use it over a long period of time.)

It is further unfortunate that, for the last few years, the various companies have put on the market (and have later removed) many purely makeshift portable machines that should be avoided. Make sure that a portable offered you is not a discontinued children's model. The worst of these are the stripped or skeleton machines such as the *Royal Signets, Remie-Scouts* and *Pioneers, Underwood* and *Corona* "Thrift" models. For example, in the *Remie-Scout* (no longer made), which was sold even by so reputable a store as Macy's at about $14, the absence of the essential marginal stops, and its single bank of keys (all capitals) rendered the machine worthless for any customary adult use, and not even a good buy as a plaything for children.

It is suggested that the prospective purchaser be on the lookout for the following defects which CR has found in different modern portables when new or after a short period of operation: tendency to skip a space; undue or chronic tendency of type bars to jam, necessitating their separation by hand, and tendency to pile or crowd (salesmen apt to blame such performance on operator's uneven touch, but some machines are worse than others in these respects, and occasionally a portable can be found which seems fairly proof against such troubles); uneven left-hand margins (to test this, in typing several lines operate line-space lever rapidly, pulling carriage back hard, in alternation with drawing it back at only moderate speed); failure, sometimes, of left marginal stop to stop the carriage at all; automatic ribbon reverse which doesn't reverse automatically *both* ways; paper slipping when rolled back on carriage; paper not holding firmly when nearing bottom edge, a particularly annoying defect; faulty alignment, i.e., tendency of certain characters to write above or below the line, or crooked (to examine alignment, use especially the keys to extreme left and right—a good test word is "lazy"); tendency of upper-case characters, when obtained by using shift key, to appear a trifle above the line. You may not succeed in finding a perfect portable, but at least you should avoid getting one that has too many of these defects, or has any one of them seriously accentuated. Some may be corrected, permanently, by a competent mechanic; others may be irremediable. CR cannot at present confidently advise its subscribers with regard to any model portable that a particular machine in that model will be free from all possible defects. The percentage of unaccountable "lemons" is higher in portables than in standard models. The manufacturers' guarantee period on the cheaper portables ($54.50 or less) has lately been reduced from one year to six months, possibly reflecting the troubles encountered in satisfactorily servicing these small machines. In any event, a portable typewriter should not be chosen because it is cheaper than a large machine, but only because it is deemed important to have a machine which can be moved about easily. A good used or rebuilt large machine, costing little more, or maybe less, than a new portable, will in general give far greater and more lasting satisfaction.

Noiseless portables sacrifice sturdiness for noiselessness. Certain delicate arrangements whereby noise is reduced go out of adjustment very frequently. Repair of such is apt to be a factory job. Repair bill after expiration of the guarantee period may be high. Of the newest and best Noiseless portables, it has not been demonstrated that they have arrived at the standards of the office Noiseless machines. CR's recommendations of Noiseless portables should be read with that present qualification in mind.

Each of the major companies makes a portable which is in general similar to its $64.50 model, minus tabulators and one or two other convenience features, and selling for $10 less. Remington offers the widest variety in portables.

Carrying cases are included in the prices quoted unless noted to the contrary.

Listings are in alphabetical order.

A. Recommended

Remington Rand 1. $64.50. Uses semi-hammer-stroke (non-noiseless) but otherwise same mechanism as *Remington 7* and *8*, which are Noiseless. Fine letterpress, yielding better appearance at the hands of an unskilled operator than does a Noiseless portable. Practically impossible to jam type.

Royal De Luxe. $64.50. The best portable that Royal makes. Quiet. In general, satisfactory as to convenience features, durability, and quality of work.

Smith-Corona Sterling. $64.50. One of the sturdiest portables on the market. Easy to operate. Quiet. But, in past, type-work of *Smith-Coronas* not so good, alignment has tended to deteriorate, occasional trouble with ribbon reverse.

B. Intermediate

Remington 5. $54.50. A sturdy hammer-stroke machine. But tendency of type to pile is marked. Lacks tabulators (as do other portables at this price) except for a paragraph-key for 5-space indentation.

Smith-Corona Silent. $69.50. Same as *Smith-Corona* Sterling, selling for $64.50, except that noise has been reduced in the same manner as in *L. C. Smith* Silent. (See listing of latter machine under *"Noiseless" Typewriters;* same comments apply.)

Underwood Portable. $64.50. Paper bail much in way, otherwise a fair machine.

The following machines are rated B because of the delicate coordinations involved in the production of this new type mechanism in compact, portable form and because experience with them does not yet warrant an A rating.

B. Intermediate (contd.)

Remington Noiseless Portable. $69.50. Very quiet. No tabulators. Otherwise very little different from No. 7 (which see, below). Has same mechanism.

Underwood Noiseless Portable. $69.50. Substantially identical in construction to *Remington* Noiseless Portable at same price.

Remington 7 De Luxe Noiseless. $73.50. Carrying case optional, $5 extra. Like No. 8 in mechanism; believed to require more even touch to obtain uniform impressions. In respect to convenience features, identical with *Remington Rand 1*, non-noiseless, selling for $64.50, case included. In all three of these machines, type does not jam easily; it is practically impossible to jam type in ordinary use.

Underwood 77 Noiseless. $73.50. Carrying case optional, $5 extra. Identical in construction to *Remington 7*.

Remington 8 Noiseless. A semi-portable. (For listing see *"Noiseless" Typewriters—Office Models.*) Would not be chosen by a person whose main interest was in travel use, unless the advantage of its 11-inch-long platen were determining factor.

Rebuilt and Other Used Machines

In buying a second-hand machine, it is best, as a rule, to get a factory-rebuilt one with a one-year guarantee. These can be obtained direct from the manufacturer or from his second-hand subsidiary. Remington has no such subsidiary but their rebuilt machines are distributed by American Writing Machine Co. Subsidiaries for the other companies are: Royal, Regal Typewriter Co. (N.Y.C.); Underwood (Master Grade Label), Wholesale Typewriter Co. (N.Y.C.); L. C. Smith, Liberty Typewriter Co.(Philadelphia). Get at least a one-year service guarantee.

Satisfactory rebuilts can also be obtained from certain other large typewriter concerns who do a high-grade rebuilding job, such as Shipman Ward Co., International Typewriter Exchange, and Reliable Typewriter and Accounting Machine Co., all in Chicago. These concerns also buy genuine factory-rebuilts from the manufacturers. Avoid the "rebuilt" offered by the small dealer, who may have done merely a "lick and promise" job on it himself, unless certified as bought from a manufacturer's rebuilding plant.

"Demonstration" or shopworn machines, which the manufacturers occasionally have for sale, are generally a desirable purchase, but be certain of their age. Their condition has not been appreciably affected by use, and their cost is intermediate between that of a rebuilt and a strictly new machine.

Buying a second-hand typewriter, especially one that is not factory-rebuilt, is somewhat like buying a second-hand automobile, but involves lesser risks. Usually the later models will be found satisfactory —the *Royal* with single glass side panel and especially with basket shift (type-basket, instead of carriage, lifted to obtain upper-case characters), *Remington* models 12 and 16, *Underwood* Nos. 5 and 6. Be sure to check on age by the serial number. All typewriter dealers use for reference a table of serial numbers by years, which should be shown willingly to customers; otherwise verify by writing the manufacturer. In the last two years or so, however, the practice of filing off the original serial numbers and substituting new ones has been quite common. Thus *Royal* 746,000-1,466,000 range was renumbered into (Y-35)-100,000 and over. The "35" may be thought to indicate the year of manufacture, whereas the machine will be anywhere from 6 to 13 years old! (SY-35)-100,000 and over is the renumbering for a later range of *Royals* approximately 4 to 6 years old. Some aged *Royals* are not at all a good buy, and it is particularly important in the case of an old-type *Royal* to try the machine for a time at home to see that it works with perfect satisfaction.

A highly coordinated machine such as the Noiseless, either full-size or portable, should not be bought from a dealer with whom one is not acquainted or regarding whose responsibility there is any doubt, because such machines may give a great deal of trouble through small and elusive defects—and those on the second-hand market are more apt to have such defects, inherent in their construction, than those recently produced.

In buying from an established, reputable, independent dealer, a good arrangement is to *rent* the machine you are interested in, with option to purchase, the *full* rental payments to be credited on the purchase of this—or any other machine in stock, if the machine first selected prove not satisfactory. This may necessitate a change in the regular form of contract, which customer should be prepared to *insist* on. Rental charge covers necessary servicing. (Incidentally, rental prices of independent dealers are apt to be substantially lower than those of regular typewriter agencies; the machines furnished perhaps not so new.)

Wisconsin's First Step Toward Consumer Legislation

A CONSUMERS' BUREAU, which, through publicity, would expose harmful and unreasonably priced drugs, cosmetics and foods and otherwise protect the public against false advertising and misrepresentation, would be set up in Wisconsin under a bill introduced by Andrew J. Biemiller, assemblyman from Milwaukee, and David Sigman, of Two Rivers.

The bill is aimed directly at patent medicines and proprietary drugs advertised as cures of such diseases as cancer. Manufacturers would be required to secure a certificate from a Wisconsin Department of Agriculture and Market's bureau, consisting of five members and a director, directly responsible to the governor. The certificate would allow them to sell articles in Wisconsin. The manufacturer would also be required to file with the bureau a list of ingredients of each cosmetic, drug or medicine. ("Wis. Bill Would Expose Harmful Drugs, Cosmetics," in *Women's Wear Daily*, May 3, 1937.)

We congratulate Wisconsin on having two politicians progressive enough to realize that there may be a future in politics for those who champion the *consumer's* cause. As consumers become more vocal in demanding safeguards and representation of their interests, more states will, no doubt, follow Wisconsin's example. All consumers should rally to the support of effective consumer legislation in their various states to help assure its enactment.

Wood Floors and Their Maintenance

WOOD FLOORS CAN BE EITHER things of beauty or eye-sores in the home—they can be a costly expense or among the cheaper elements of the maintenance of the home. Most homes built today in the cities or their suburbs have oak floors in the living rooms, sun parlors, and dining rooms. The kitchens and bedrooms often have pine floors, although most of the more expensive homes have oak floors in the bedrooms. These floors are laid over sleepers or an underflooring. The latter should be laid in a diagonal relationship to the top flooring. In purchasing a house or having a new floor installed, it is well to see that the sub-floor or underflooring is not laid parallel with the top floor, for the boards will warp or cup and become squeaky due to irregularity in the sub-floor or to the fact that it has been impossible to nail flooring securely.

If you are laying a floor, it is desirable to use tongue and groove flooring not less than ⅞-inch thick; many more sandings or scrapings can be obtained without the necessity of having a new floor laid. In addition, this type of flooring will stay tighter, be more impervious to moisture, and permit less dirt and cold to penetrate through from the cellar than will a ⅜-inch type. Moreover, in refinishing this type of floor you do not have the difficult job of trying to permanently putty the nail holes, which you have with the flush, topnailed floor. In homes that have pine floors, the pine should be edge grained (that is, the dark lines or grain in the wood run fairly straight and are narrow) instead of flat grained pine in which the grain is wide, flat, and "wavy." An edge grained pine is harder and does not dent readily while the flat grained pine is considerably softer, shows every mark, and is hard to maintain. Flat grained hardwoods do not present this difficulty, but are generally considered to have a somewhat less pleasing appearance.

If floors have become scratched and dull, it is not always necessary to have them rescraped. Rescraping advances you one step nearer to the necessity of having new floors laid and is expensive in comparison to the cost of merely cleaning and refinishing. When a floor is level, with no warped, cupped, or uneven boards, it may be cleaned and refinished in the following manner, *if the boards have a coating of shellac on them:*

Rent a polishing (not a sanding) machine with a brush diameter of 13 inches, if possible. Get a pound of No. 3 steel wool (rope form is easier to place on the brush) for each medium-sized room to be cleaned, and a quart of denatured grain alcohol. Clear the room of all furniture; then wash the floor with warm water and an alkaline or neutral soap. (*Gold Dust* is not recommended for this purpose.) Wash with clear water after the soapy water, and do not use any more water than necessary.

Next set up the polishing machine with a wire brush. Make a pad as flat as possible with one-half of a package of steel wool, and place under the wire brush. Next mix the alcohol half and half with water. (Do not use straight alcohol.) Sprinkle the dilute alcohol over the floor; then start the polishing machine. In going over the surface with steel wool, do not go closer than a foot from the baseboards or walls or they may be scratched or splashed. Use steel wool by hand in the corners and where the machine does not go. When the floor has been thoroughly scoured with steel wool, wash clean with clear water. Before refinishing, let the floor dry thoroughly for at least three hours with the house warm. When dry, shellac the floor with a wide brush.

If there is varnish on the floors, and they are dark and discolored, do not under any circumstances use alkaline varnish removers sold as dry powders, since they darken the wood. Liquid varnish removers of the organic type may be recommended because they do not darken the wood. (It must be remembered, however, that such organic solvents are highly toxic or inflammable or both and they should be used with extreme caution.) Rescraping is the only means of restoring the natural wood color to a discolored varnished floor. Bleaching after using a varnish remover only injures the wood more.

Scraping or Sanding of Floors

In the event that your floors are too bad to be cleaned satisfactorily, they should be scraped by a professional floorman. In obtaining a floorman, select a man whose trade is that of a floor layer and scraper, and not a painter or roofer who may have failed in that line of business and has decided to become a floorman by renting a machine and learning on your floors. As a rule, a flooring or lumber dealer, if he does no floor work himself, can recommend a man whose work can be trusted.

Before the floorman comes, measure the rooms and multiply the length by the width to get the square footage. After the floorman measures the rooms check your figures with him. Some floormen will measure the room in order to quote a footage price, and add footage to make up for a low footage price. It is hard to state a universally fair price per square foot which a floorman may ask. Four cents per square foot in the city is a rate at which a floorman can afford to rescrape an old floor and refinish with shellac and make a fair profit on his work. In the country or fifty miles away from a large center, one man holds he must charge six cents per square foot in order to make the same profit as the city floorman, due to the greater overhead and time lost in carrying on a job in thinly settled areas.

There should be a complete understanding at the time of the estimate as to whether the closets, halls, and door saddles are to be scraped, and the home owner should insist on knowing what grits of paper the floorman will use. If a No. 4 or No. 3½ grit paper is to be used first to take off the old finish, a No. 2½ or No. 2 should follow, then a No. ½, and finally a No. 0 or No. ²/₀ paper should be used. On a pine floor, however, a No. ½ paper is as fine as can be used to finish with, as any finer paper will clog due to the pitch in the wood. It is of the greatest importance that sandpapers of the finenesses just listed be used because, if fewer grades are used,

the floor will not be smooth and even and will be in a condition to be scraped again within a year due to dirt getting and staying in the rough floor and ruining the finish. After the floor is finished, see for yourself, by looking *along the floor toward the light*, if there are any waves or scratches visible and if the edges along the quarter round or baseboard are smooth and match the center of the room. If not, insist that the faults be corrected.

Floor Finishes and Floor Refinishing

Today seventy percent of the floors in large cities are being finished with shellac, twenty percent with sealer, ten percent with varnish. For many homes, on hardwood, oak, or on pine, fir, or spruce softwood floors, shellac is one of the most serviceable finishes. An oak floor filled with pure (silex) paste filler after scraping, then covered with three *thin* coats of pure 5-pound-cut white shellac, and then waxed with a good grade of paste wax at four-month intervals should stay in excellent condition for a minimum of six years. In selecting a shellac, care should be taken to see that 5-pound-cut *is marked on the can* and purchased from a dealer who has a brisk trade in shellac, since this material will deteriorate after six or eight months in a sealed can standing on a dealer's shelf and, if used then, will cause the floor to become dark brown when applied. (Shellac put up in glass does not deteriorate in this way.) If possible, purchase the shellac from a floor supply house instead of a hardware, paint, or department store, since a floor supply house sells shellac in large quantities and buys frequently. The comparison in price today for a 5-gallon can of 5-pound-cut shellac is $2 to $2.50 per gallon in hardware, paint, or department stores and $1.15 to $1.25 in floor supply houses.

In purchasing alcohol to thin the shellac only 188 proof, No. 1 solvent, denatured alcohol should be used. The price of this grade over the No. 5 solvent which is sold in auto supply stores is only ten to twenty cents per gallon greater, but it assures your not spoiling your shellac, which is far more expensive. Shellac should be applied in thin coats, cut with alcohol (at least one quart of alcohol to one gallon of shellac) and with a brush that will cover three two-inch boards at one stroke so that there is less difficulty with lap marks. Always apply shellac with the grain of the wood, in long and even strokes. On a newly scraped floor, it will take the first coat, on a dry day, in an average-sized living room, fifteen to twenty minutes to dry. When dry, either rub with steel wool, or sandpaper lightly by hand; then sweep the room out before applying the second coat. The second coat should be left to dry about two or three hours, then gone over with steel wool or sandpaper. Sweep out before applying the third coat, which should be left overnight to dry, if possible; if this is not feasible, it can be walked upon in about three hours. If a floorman is shellacking the floors, check his material with him carefully to make sure that he is not using shellac substitute which looks well enough when freshly applied, but which will wear or chip off within three to six months.

Do not apply wax to the floor until eight or ten hours after the last coat of shellac has dried, else the solvent in the wax may affect the shellac. Under no circumstances use the so-called "no rubbing" or water emulsion waxes on a newly shellacked floor, as the water content will turn the shellac white and may cause it to blister. "No rubbing" or water waxes will not last over a month and are very expensive in practice. They are not really free from the need to be rubbed; indeed, they must be polished in order to make the floor shine, else they will show a white film.

If varnish is the finish desired, an oak floor should be paste-filled so that the varnish will not darken the floor in the course of a year or two. Varnish takes from twelve to fourteen hours to dry, depending upon the temperature and humidity. Care should be taken that only a good grade of *floor varnish* is used, as cheap varnishes will scratch and "check" within a short time after being applied.

In the past four years, penetrating floor sealers have come into prominence, pushed on the consumer by high-pressure sales methods and more or less impossible claims, although some of the advantages of sealers are real and not to be classed as pure salesmanship. Wood is made up of cellular fibers not unlike a honeycomb, formed by the natural growth of the tree. The sap of the tree is held in these cells or fibers, and as the tree grows, new cells are formed and the old dry out and contain only dried out sap and air space. When the lumber is milled these minute cells are exposed to the surface of the flooring and remain open until covered by some finish. A penetrating seal fills the open wood cells at the surface of the boards and seals the wood against dirt and temporary contact with moisture, without forming a thick layer over the wood. Purely surface finishes, such as shellac and varnish, will wear off more quickly and expose these open wood cells to dirt and moisture. While a penetrating sealer may show wear in places subject to heavy traffic and much walking, such as doorways and narrow hallways, wood treated with it can be cleaned and more sealer applied in the worn places without showing lap marks in the finish (as would be the case if shellac and varnish had been used).

In large apartment houses and institutions where the floors receive extraordinarily hard wear, a penetrating sealer is quite desirable because it can be cleaned satisfactorily without rescraping. This is an important matter, since after six scrapings have been carried out, the owner will probably be confronted by the necessity of laying new floors.

There is more work required in preparing a floor for sealing than with other finishes, for the floor must be sanded perfectly. Any marks or unevenness of work will show very distinctly after penetrating sealer has been used. For a fine job, the floor must be gone over with steel wool by machine between coats of sealer and polished after the last coat. Water damages floor sealer finishes by darkening them. Floors treated with sealer should preferably not be washed, but if great care is taken they may be washed by using lukewarm neutral soapsuds, then lightly going over with clear water. Steel wool and a little wax will remove most stains or dirt

from the floor. Penetrating sealers are alcohol resistant.

The cost of having floors scraped and sealed properly by a floorman who has had experience in this work is usually seven to eight cents per square foot. The charge for recleaning and polishing at the end of two years or whenever needed will be about two and one-half cents per square foot.

In the past three years there has been a great deal of renting floor finishing machines by home owners in order to finish their floors. Hardware stores advertise machines at a rental charge of $3 to $5 per day, and the consumer figures it will be but a few dollars more to scrape and finish his own floors. Assume that the home owner intends to finish a living room, dining room, and an entrance hall, measuring 400 square feet, and that he lives in a suburb of the town where he will rent the machine for say $4 per day. There is an extra 50 cents or $1 charge for delivery of the machine, if he hasn't a car. It will take the novice two or three days to do his finishing if he has not seen a machine operated. If the machine is not returned by five P.M. another half day rental is usually charged. Sandpaper is extra, and for his job it may take $5 worth at the exorbitant rate charged by the sheet. If he strikes nails protruding in the floor, he will waste a sheet; and if the proper grade paper has not been chosen, he will gum up the sheets with varnish (if it has been used on the old floor) ruining them until it is removed. He must buy a handscraper to clean the edges of the floor, or in the corners and under radiators, as no machine will do this, thereby adding the cost of the scraper and blades at 75 cents to $1. If he hasn't a shellac brush, one must be purchased; a 4-inch to 6-inch width brush, which should be used, cannot be purchased any cheaper than from $2 to $3. The shellac needed will cost from $3 up, depending upon the place of purchase, and there will be 60 cents for alcohol. By adding the above items, one discovers that it costs from $20 to $25 for the home owner to do the job himself, and then, unless he is skilled at the job, he has no assurance that his floors will be smooth or even.

If he has damaged the sponge rubber pad on the rental machine, he is liable for at least $5 more for its replacement to the machine owner. If an experienced floorman does the job, it costs (at the rate of 4 cents per square foot) about $16. He can tell pretty accurately in advance what the price of the job will cost. The local hardware and paint store owner, who has invested $200 in a rental machine, may not be perfectly frank in telling you that it may be cheaper to have your job done by a floorman, for he can rent you his machine and sell you sandpaper at 300 percent profit; then there are shellac and various extras at 100 percent profit, with the possibility that if you cannot successfully finish your floors, or if you spoil them, he can earn a commission of another $5 by having a friend of his in the floor finishing business do the job for you, finally.

E. KAESTNER

Editors' Note: This discussion of the difficulties of the householder's doing his own work applies chiefly to people living in big cities. Small town folk, on the whole, have retained their ability to do such work satisfactorily, themselves. This article should not be interpreted as discouraging house-owners who have the aptitude and manual skill from finishing their own floors, particularly if they will take pains to read and follow available directions carefully.

Electric Fans

A SMALL, TEN-INCH ELECTRIC FAN, adequate to circulate air through one or two rooms, to help with the summer cooling and the winter heating, should cost not over two-tenths of a cent per hour to operate when electricity costs five cents per kilowatt-hour. This low cost of operation is made a requirement when the Federal Government buys ten-inch fans. The Government not only insists that a fan be economical to operate but also requires that it deliver a good breeze for the money spent. The fan, moreover, must run quietly, not get hot, be easily and safely adjusted, have a strong safety guard, be self-lubricating, measure up to standards of safe electrical insulation, and fulfill numerous other specifications which are characteristic of good design and are desirable for convenience.

When an ordinary consumer buys a fan, however, he is quite likely to obtain one which will run hot, become noisy, have poor electrical insulation, or give only half the breeze it ought to for the amount of electrical power used. Each of these defects was found in at least one of the nine small fans bought in the retail market by CR for test, and several defects were combined in some of the fans.

There are a few general principles which may be helpful to the consumer who is about to purchase a fan. One of the most important of these is that a fan which can be used on both direct current and alternating current should be bought only when it is known that it will be required to be used on direct current; it happens that a fan which is designed specially for use on alternating current can perform on alternating current much better, due to its having no commutator or brushes to wear out or give radio interference. All fans and other electric motors which must run on both types of current represent a compromise in design such that they do not work as well as they should on either kind of electricity supply. When a direct-current fan has to be bought, it is advisable to test it to see whether it produces objectionable "static" in a nearby radio which is turned on to full volume. In any case, choose a fan which is sturdily built, e.g., one that has a heavy, firm base so that it will not wobble or tip easily, with a strong guard that will resist a good deal of banging about, strong well-built fan blades, a strong shaft, and sturdy bearings which can be easily lubricated. (Some of the cheap department-store and drug-store fans announce to any experienced observer that they are

inferior products, by the light, flimsy, skimped, and sometimes top-heavy construction which they show.) The felt covering on the base should preferably extend up on the sides about one-quarter inch. If an oscillating device is included, see that it can be easily turned on and off.

Flexible rubber blades are less dangerous than the usual type of metal blade but are more likely to vibrate excessively because of the greater weight of the blades and the greater difficulty of balancing them. See that the fan blades are all in line. Four blades serve the purpose; that number is required on fans which the Government buys; six blades, which are found on some fans, do not materially improve the performance. Safety guards which surround the blades are one of the most neglected parts of the electric fan. The protection is especially weak in the back of the fan where the danger is greatest. If the fingers are accidentally put into the front of the fan, they are most likely to receive a blow from the face of the blades, which may not be dangerous. If, however, they go through the back of the guard, they are struck by the edge of the blades and may be severely cut.

The hum of an electric fan, due to the cutting of the air by the revolving blades, is greatest for blades of the conventional pear shape. If one desires noiselessness, it is well, before buying, to listen to the fan operating in a quiet room, such as is provided in some stores for listening to phonograph records. A fan that seems quiet when running in the usual store may seem noisy in a bedroom. Some fans are not well balanced and consequently vibrate excessively. The vibration not only increases the noise but also accelerates the wear on the bearings. Excessive vibration while the fan operates may be detected by feeling the top of the motor frame. The vibration of a properly designed, built, and balanced fan should be hardly more than perceptible. If the fan has more than one speed, see that it starts easily in each position of the switch, for if it sticks, it is either poorly designed or has excessive friction which may later cause some sort of trouble with the fan.

One crude way to test the quality of the electrical insulation is to let the fan operate and to touch some metal part of it (bared so as to permit contact with the metal underneath the finish) to the metal chassis of a radio set with the volume turned on full and the tone control (if one is present) adjusted to that position which accentuates the high notes (the radio's ground connection should be in place). If insulation is seriously defective, there will be "static" produced in the radio by the leakage currents flowing from the frame of the fan to the radio chassis. It is advisable to try this test twice, with the cord plug inserted in each of the two possible ways into the electrical outlet. The experimenter should wear dry, thick gloves so as to protect himself from dangerous shock which might result in rare circumstances—in case the fan or the radio should be seriously defective—from touching bare metal. In no case should the non-expert attempt an experiment of this sort without protecting himself in some such manner as suggested, for there is a real hazard.

A ten-inch fan should consume not more than forty watts of electrical power and should produce a noticeable breeze over a vertical circle area six or eight feet diameter at a distance of at least twenty feet from the fan. Smaller than ten-inch fans are usually not practical. A twelve-inch fan should consume not more than sixty watts and a sixteen-inch fan not more than one hundred watts. If a watt meter is not available, one can compare the power of the fan with that of an electric light bulb, the wattage of which is marked on the bulb, by observing the number of turns of the disk of the electric house meter when the fan and the light bulb are each turned on in succession for the same length of time—with, of course, all other lights and appliances in the house disconnected during the experiment.

An oscillating mechanism adds twenty to forty percent to the purchase price as well as something to the cost of operation of a fan and is often not necessary for attaining a proper circulation of air. A little experimenting, however, may be needed to determine the best location of the non-oscillating fan for efficient air moving. Non-oscillating fans should be used with great care to avoid continued steady draft on the body, even in the hottest weather, for the body is physiologically incapable of maintaining its proper temperature in steady drafts. Sometimes directing the air stream along the wall at one point will cause air to follow the wall contour completely around the room, without setting up objectionable drafts.

Ratings of the following fans are based upon careful engineering examinations and upon standard performance tests for effectiveness, efficiency, noise, radio interference, temperature of operation, safety of electrical insulation, durability, and general compliance with Federal Specifications.

The effectiveness of the fans was determined in accordance with the Bureau of Standards procedure as the thrust in pounds which the fan can exert on the air. Similarly, efficiency, which is a measure of the effect produced for a given expenditure of electrical energy, is indicated by a factor of merit (really, in this instance, a "factor of demerit") obtained by dividing the watts of electrical power by the thrust in pounds. The factor of merit demanded by the Government for its small-size fans is 170 or less. Some of the fans tested by CR easily fulfilled this requirement, but others had a factor of merit two or three times as great, which indicated very inefficient performance. The factors of merit for the fans tested varied from 142 for the most efficient fan to 563 for the least efficient fan and indicated from two to four times as much breeze for a given expenditure of energy for the one fan as for the other. All fans tested had either completed satisfactorily a limited life test of 1000 hours or had operated several hundred hours and were still going well in the life test, as this report went to press. Except in two instances, speed of rotation was not found to exceed 1800 revolutions per minute, the Federal Specifications maximum. This limit is advisable for the sake of limiting both the noise produced and the hazard in operation. Cords supplied were at least eight feet in length

(the Federal Specification), except where stated in the listings. All ratings are cr 37.

A. Recommended

General Electric, Cat. No. 42X542 (General Electric Co., Bridgeport, Conn.) $9.95. 10-in. size. 110 to 120 volts, a-c only. Non-oscillating. On-off switch in base of fan. Oiling system judged to be of best type. Some hum, but judged not likely to be objectionable. Performance excellent. Did not quite meet Federal Specifications for range of adjustment in vertical direction, but discrepancy judged unimportant for average use. General construction good. 2

Wagner, Type 5160, Model L82 A 98 (Wagner Electric Corp., St. Louis) $9.95. 10-in. size. 110 volts, a-c only. Non-oscillating. On-off switch in base of fan. Some hum, but judged not likely to be objectionable. Breeze production good; efficiency did not quite meet Federal Specifications. Cord only 7 ft 2 in. 2

General Electric, Quiet Type, Cat. No. 49X607 (General Electric Co.) $11.95. 8-in. size. 110-120 volts, a-c only. Non-oscillating. On-off switch in base of fan. Oiling system judged to be of best type. This fan is small but noteworthy in respect to small amount of hum produced, but vibration was considerable. Breeze production and efficiency judged good for fan of this size. Did not quite meet Federal Specifications for range of adjustment in the vertical direction, but discrepancy judged unimportant for average use. 3

Westinghouse, Cat. No. 803018-A (Westinghouse Electric & Mfg. Co., Springfield, Mass.) $11.95. 10-in. size. 100 to 120 volts, a-c only. Non-oscillating. Off-high-medium-low switch in base of fan. Operation comparatively quiet. Performance excellent, except the efficiency (breeze produced by a given expenditure of electrical energy) was low at the two lower speeds. Safety guard well made and designed to give better than average protection, at the rear of fan blade. General construction good. Cord only 7 ft 7 in. 3

B. Intermediate

Diehl, Cat. No. F10012 (Diehl Mfg. Co., Elizabethport, N.J.) $9.95. 10-in. size. 110 to 120 volts, a-c only. Non-oscillating. On-off switch in base of fan. Operation comparatively quiet, although hum produced was more pronounced than that of *Westinghouse* or *Eskimo* and vibration of fan was more pronounced than in either of the first two fans listed. Breeze production and efficiency met Federal Specifications. 2

C. Not Recommended

Airflow, Cat. No. 20—2426 (Distrib. Sears, Roebuck & Co.) $5.50 plus postage. 9-in. size; 6 blades. 110 volts, a-c only. Oscillating, with two angular ranges of oscillation. On-off switch in base of fan. Operation comparatively quiet. Did not meet Federal Specifications for adjustment, since operation of oscillating mechanism could be changed only with difficulty. Breeze production and efficiency failed by considerable margin to meet Federal Specifications. Cord only 7 ft 7 in. Cat. No. 20—2525, costing $4.75, appears to be similar. 1

Arctic Aire (F. A. Smith Co., Rochester, N.Y.) $4.95. 10-in. size. 110-115 volts, a-c only. Non-oscillating. On-off switch in motor housing. Operation comparatively quiet. Breeze production and efficiency failed by a considerable margin to meet Federal Specifications. Did not quite meet Federal Specifications for range of adjustment in a vertical direction, but discrepancy judged unimportant for average use. Cord only 6 ft 6 in. 1

C. Not Recommended (contd.)

Cool Spot, Type 511 (Signal Electric Mfg. Co., Menominee, Conn.) $6.50. 10-in. size. 110-115 volts, a-c only. Non-oscillating. On-off switch in base of fan. Some hum, but judged not likely to be objectionable. Breeze production low; efficiency poor. Speed of rotation exceeded by a considerable margin Federal Specifications' maximum (undesirable). Cord only 5 ft 5 in. 1

Diehl Junior, Cat. No. 8012 (Diehl Mfg. Co.) $3. 8-in. size. 110 volts, a-c only. Non-oscillating. Switch not provided. Operation relatively quiet when first purchased, soon became noisy. Motor showed high temperature rise, which is undesirable. Breeze production low; efficiency very poor. Safety guard judged inadequate. Small, light duty bearings. One of two fans of those tested which failed to meet fundamental safety requirements for electrical insulation. Cord only 5 ft 8 in. 1

Emerson Seabreeze, Type 3150 (The Emerson Electric Mfg. Co., St. Louis) $6.50. 10-in. size. 110 volts, a-c only. Non-oscillating. On-off switch in base of fan. Operation fairly quiet. Breeze production good; efficiency failed by a considerable margin to meet Federal Specifications. Temperature rise also exceeded Federal Specifications by a considerable margin. Did not meet recognized standard safety requirements ("flashover" occurred at 600 volts). Cord only 5 ft 5 in. 1

Kwik Kool, Cat. No. K-157 (Kwikway Co., St. Louis) $2.49. 8-in. size. 115 volts, a-c only. Non-oscillating. Switch not provided. Operation fairly quiet. Breeze production low; efficiency poor. Would not meet proper specifications for range of vertical adjustment. Safety guard around blades strong but judged not to afford adequate protection. Very small, light duty bearings. Cord only 4 ft 5 in. 1

Polar Cub, Model A-23 (A. C. Gilbert Co., New Haven, Conn.) $4.95. 9½-in. size. 110-120 volts, a-c only. Non-oscillating. On-off switch in motor housing. Hum unusually loud. Breeze production and efficiency failed by a considerable margin to meet Federal Specifications. Speed of rotation exceeded by a considerable margin Federal Specifications' maximum (undesirable). Cord only 5 ft 8 in. 1

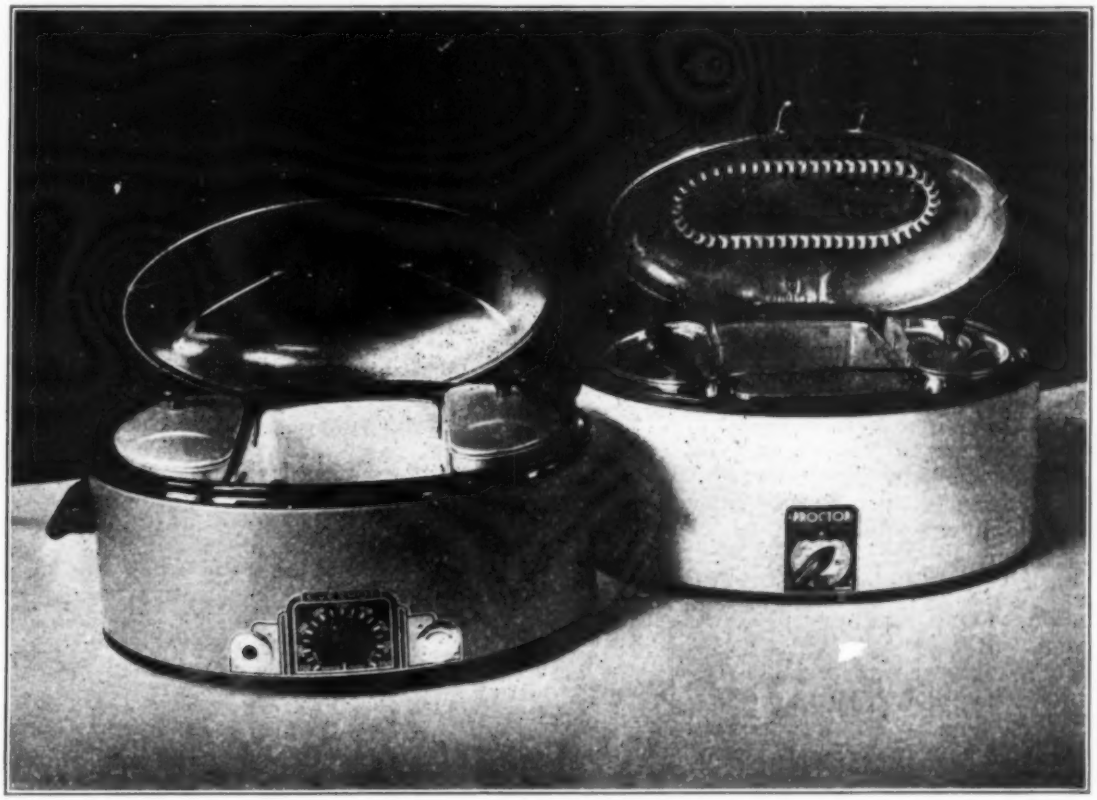
Sterling, Cat. No. 20 D 2440 (Chicago Electric Mfg. Co., Chicago; distrib. Sears, Roebuck & Co.) $1.59 plus postage. 8-in. size. 110 to 120 volts, a-c only. Non-oscillating. On-off switch at top of frame. Operation fairly quiet, but breeze production low; efficiency very poor. Safety guard poorly made and judged not to give adequate protection. Very small, light duty bearings. Cord only 5 ft 5 in. 1

Eskimo, Model 35F, Cat. No. 486—5602 (United Elec. Mfg. Co., Adrian, Mich.; distrib. Montgomery Ward & Co.) $8.95 plus postage. 10-in. size. 110 to 120 volts, a-c only. Oscillating. High-low-off switch in base of fan. Operation initially quiet but due to excessive end play in the shaft developed a rattle after 500 hrs of operation. Breeze production low; efficiency poor. 2

Safe-flex (Samson-United Corp., Rochester, N.Y.) $7.95. 9-in. size; 4 flexible rubber blades. 115 volts, a-c only. Non-oscillating. High-low-off switch in base of fan. Practically no hum, but vibration was excessive. Breeze production and efficiency failed by considerable margin to meet Federal Specifications. Did not meet Federal Specifications for adjustment since fan is not designed as a wall-type, but only as a desk-type fan. A possible purchase for use where young children must be protected from possibility of coming in contact with usual type of fan blades, at the expense of inefficient use of current and increased vibration. Cord only 7 ft 3 in. 2

Portable Electric Roasters

PORTABLE AUTOMATIC ROASTERS, to use the confident words of Westinghouse, are designed to do "every cooking process performed by *any* cooking device." They are the latest type of electric cooking appliances to tempt the gadget-loving housekeeper, ever hopeful of new contrivances which promise to lighten her burdens and time spent in the kitchen. The roasters tested by CR were found, indeed, to do their job pretty well, although experience with them was by no means universally favorable. They, unfortunately, too often displayed a lack of good engineering design, generally to be expected, perhaps, of innovations which may eventually be improved as manufacturers profit from the public's testing, through experience, of all new electrical appliances. The roasters are, nevertheless, practical cooking devices offering the advantages of convenience, ease of control, and cleanliness of the electric oven, and at much lower cost than would be available through the purchase of an electric range; as they become improved in details of design, they should fulfill satisfactorily the needs of many small families. (It is to be noted, however, that the great difference in price between a range and a roaster is not warranted by any correspondingly large difference in production cost. What the manufacturers are doing is to seek to tap both the high income and low income markets simultaneously, with devices which will not be too nearly competitive with each other.)



A gas hot-plate for frying and boiling and a well-designed electric roaster for roasting, baking, and grilling would be a convenient and comparatively inexpensive combination for use in many households. Roasters in general have a large enamelware or a bright metal inner container, which is always in place when the roaster is in use, and three smaller dishes which all fit together into the large container for the purpose of cooking several things at one time. The roasters also have a rack suitable for supporting baking dishes. Broiling grills are obtainable for the majority of roasters at additional cost, but of those tested, the only roaster which came equipped with a grill was the *Proctor*.

Most of the roasters failed to maintain within reasonably close limits the temperature at which they were set. In general, temperatures would vary forty, fifty, or more degrees each side of the nominal setting, nearly twice the variation which should be considered reasonable. One roaster did much better than this, but offsetting its advantage was the fact that its thermostat produced an unusual amount of radio interference. Lack of accurate temperature control does not prevent the attainment of satisfactory results in cooking after experience with a roaster has been gained by repeated trial; good temperature control, however, does greatly increase the probability of achieving good results.

Three of the roasters failed to meet standard requirements for safety of electrical insulation, although the failure was probably not sufficiently great in any case to constitute a serious hazard to the user. All of the roasters were less well insulated thermally than they should be for most economical

operation; they became so hot that they could not be set on a varnished table top without danger of damaging the surface, although it would not have been difficult to design a roaster which could safely be used in this way. Certainly no housewife should be subjected to the risk of ruining even kitchen furniture for lack of sufficient insulation.

"Again Westinghouse, a pioneer in electric cooking equipment, steps out in front," as their advertisement says, with a roaster which was inferior to others tested by CR in being quite unsatisfactory in certain important details. This product of "Westinghouse designers, engineers, home economists, and workmen who have given their experience, talents, and skill to this roaster," with a name which, they say, "means everything in electricity," ranked lowest of five roasters in tests for adequacy of electrical insulation, and for the accuracy of performance of the temperature control device.

In selecting the size of a roaster, choose one not larger than will probably be needed to hold the average amount of food you intend to cook, for the larger the roaster the more costly it will likely be to operate, though the cost of operation should not increase in the same proportion as the capacity of the roaster. The *Westinghouse* cost about twice as much to operate as the *Everhot,* which had a capacity a little over half as great (measured by size of the large inner container). At five cents per kilowatt-hour, a roast of pork consumed approximately seven cents' worth of electricity when cooked in the *Everhot;* a similar roast consumed approximately fifteen cents' worth of electricity when cooked in the *Westinghouse.* (Anyone paying at a different rate for his electricity can easily calculate his own cooking costs by simple proportion.) ¶ The capacity of the smallest roaster tested was such that it would hold a ten-pound ham or a ten-pound turkey in the large inner container.

Brightly polished metal covers which are furnished with some roasters, are preferable to enamelware covers, for the reason that they radiate less heat and do not chip or crack. It is necessary, however, to have in mind that such covers should be so finished as to be easy to clean and that they should be made of a material which will not rust.

Each roaster was tested for operating cost by measuring the actual amount of electricity used, and for efficiency of thermal insulation by determining the power expended, per unit of volume of the roaster, in maintaining the temperature at 400 degrees Fahrenheit. The efficiency of the thermal insulation varied for the different roasters by almost two to one, indicating a very unenlightened approach in some cases to the relatively simple problem of mechanical design involved in such roasters. *Everhot* was the best in this respect and *Universal* the worst. While heating of the kitchen even by the roaster consuming the largest amount of electricity would hardly exceed that of an ordinary electric flatiron, and hence perhaps could be considered unimportant by the housewife, the needless increase in the electric bill due to waste of heat would likely be of some concern. All roasters were subjected to certain standard tests for safety of electrical insulation and were used in various practical cooking operations. The test for each roaster consisted in roasting meat. Besides, various other operations were tried, some with one roaster and some with another, such as roasting a fowl, baking a pudding, steaming vegetables, or baking pies. All were operated for at least 200 hours during the testing, and with the exception of *Universal,* which burned out after 118 hours, all showed little evidence of deterioration. Thermostats of the roasters, in general, produced an occasional slight click which could be heard in the radio, like that produced by turning a light on or off; the thermostat of the *Nesco,* however, "chattered" and produced objectionable noise in the radio.

All ratings are cr 37.

A. Recommended

Everhot, Cat. No. 656, Series A (The Swartsbaugh Mfg. Co., Toledo, Ohio) $21.75. 1000 watts, 115 volts, a-c only. Large oval inner container, enamelware, 9¼-qt capacity. Chromium-plated steel cover. Aluminum dishes made of rather too thin aluminum sheet. Ranked first of the 5 roasters tested in economy of operation. Best in thermal efficiency and nearly 100% better than *Universal,* which was the poorest in this respect. Satisfactorily met electrical insulation and radio interference tests. Performance in cooking tests, good. The temperature-indicating dial was inaccurate (a defect easily corrected by a manufacturer using proper production and inspection methods). Bakelite-type handle of one dish cover broke when roaster was heated. **2**

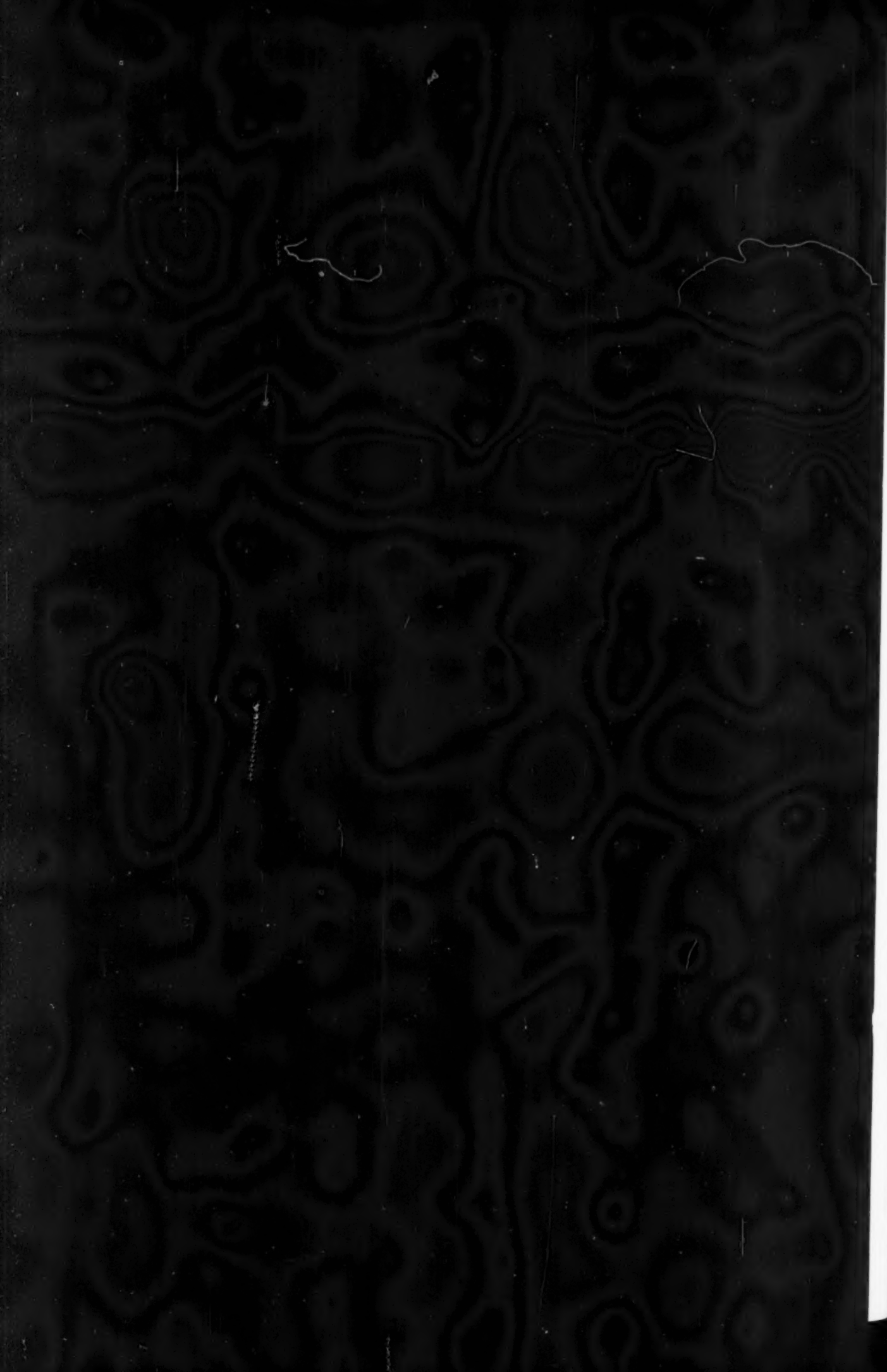
Proctor, Cat. No. 100 (Proctor & Schwartz Electric Co., Seventh and Tabor Rd., Philadelphia) $25. 1320 watts, 110-120 volts, a-c only. Large oval inner container, enamelware, 11½-qt capacity. Polished aluminum cover. Aluminum dishes. The only roaster tested which was equipped with grilling appliance consisting of a heating unit positioned in the cover and radiating downward. Ranked second of the 5 roasters tested in economy of operation. Better than average in thermal efficiency. Satisfactorily met electrical insulation and radio interference tests. Performance in cooking tests, good. **3**

B. Intermediate

Universal, Model E9985 (Landers, Frary & Clark, New Britain, Conn.) $16.95. 1000 watts, 110-120 volts a-c only. Large oval inner container, aluminum, 8¼-qt capacity. Chromium-plated steel cover. Aluminum dishes. Because of its small size, this roaster was fairly economical in economy of operation; ranked third of the 5 tested. Its thermal efficiency, however, was lowest of 5 roasters tested and only about half as good as for *Everhot.* Satisfactorily met radio interference tests; but performance in electrical insulation test was not satisfactory. Performance in cooking tests, good. Heating element burned out at end of 118 hrs of intermittent use. Recipe book giving the special directions required for roaster cookery was not included. **1**

C. Not Recommended

Nesco, Cat. No. R.A. 96 (National Enameling & Stamping Co., N. Twelfth St., Milwaukee) $19.95. 1000 watts, 105-115 volts, a-c only. Large oval inner container, enamelware, 11-qt capacity. Enamelware cover. Enamelware dishes. Ranked fourth of the 5 roasters tested in economy of operation. Worse than average in thermal efficiency. Thermostat better than average in maintaining temperature at value of setting. Gave



CUMULATIVE INDEX

General Bulletin, Volume VI: October, 1936, to June, 1937, Inclusive

This index is for the issues of October, 1936, Vol. VI, No. 1; January, 1937, Vol. VI, No. 2; April, 1937, Vol. VI, No. 3; and June, 1937, Vol. VI, No. 4. Single issues are 30 cents each. Subscription is $1 for the subscription year October through June.

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FOR YOUR Consumer's Bookshelf

Guinea Pigs No More

By J. B. Matthews

In these days of sharply rising prices, which some claim are due in part to the numerous strikes all over the country and the resulting wage increases, the consumers are becoming conscious of their rights *as consumers.* Are the interests of workers and consumers identical? Would the "workers' state," which is the Utopia of some of our social theorists, concern itself with abolishing patent medicines, chemicalized bread, and other mass production food? Is not the use of lead arsenate spray on fruits and vegetables "misdirected" labor power?

These questions and many others dealing with the relationship of consumers to workers are thoughtfully discussed in this book. *Guinea Pigs No More* also discusses "Who Are Consumers?" How does the consumer's interest differ from that of the so-called public welfare? It is important to define very clearly the concerns of people as consumers as differentiated from their other roles in society as producer and worker.

This book should be read by everyone who is interested in social problems, or who wishes to understand clearly various social and economic conflicts which occur daily. Teachers and group leaders working in the field of Consumers' Problems will find it invaluable in orienting their courses and integrating the different parts of their program.

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Eat, Drink and Be Wary

By F. J. Schlink

The wide propagandizing of milk as a "health food" is shown in this book to be a triumph of big-business enterprise and subsidized science. A brief study of the average man's sources of information reveals the fact that it is mainly misinformation, concealed propaganda, and pseudo science in one form or another for canned foods, milk, white bread, breakfast cereals, and the like.

A wealth of new material is digested for the non-technical reader from authoritative scientific papers on the poisoning of fruits, vegetables, milk, and a large part of all commercially processed foods by arsenic, lead, and other poisonous metals. The author has set forth the first discussion in print of the ingenious and peculiar adulterations and misrepresentations of the commercial baking trade.

A constructive summing-up is given of what really *is* known about food science, by experts who aren't hired to have particular views in favor of bran or oranges or viosterol or vitamin D milk. The author shows how and what to eat in order to avoid, as well as one can, adulterated, overrefined, and downright dangerous foods and beverages. Though the material is mainly from Consumers' Research files, very little of it has appeared hitherto in Consumers' Research *Bulletins*, or in any other book or pamphlet.

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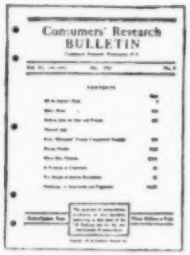

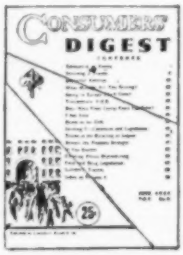

Consumers' Digest is growing by leaps and bounds. We expected that, for the most part, it would be distributed mainly on the newsstands. Now we discover that people actually want to subscribe and, furthermore, that they want *both* Consumers' Research *Bulletin* and *Consumers' Digest.*

Although *Consumers' Digest* was planned to reprint the general discussion and *Recommended* listings of commodities from previously issued Consumers' Research *Bulletins,* it has come to contain much new material and articles reprinted from other publications. Take, for example, the June issue. In addition to reprinting the discussion of trailers from Consumers' Research *Bulletin,* March, 1937, and the names of the favorably recommended makes, the *Digest* presents:

- "Beware of the Pleasant Stranger," an analysis of the technique of the book agent, by Charles S. Wyand.
- "I Am Anti," the disillusionment of a confirmed enterer of prize contests, by Charles Rudolph.
- "Tricks—in the Retailing of Liquor," by the liquor checker of a large hotel.
- "Beautiful America," a tour through historic and scenic Virginia with a map showing the auto routes through various points of interest.

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It is understood that my handling of any CR material which is marked, "The analyses of commodities, products, or merchandise appearing in this issue are for the sole information of subscribers," will be in accordance with that direction.

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Address.....

City..... *State*.....

My profession or business is.....

CRD

C. Not Recommended (contd.)

considerable radio interference; performance in electrical insulation tests was not satisfactory. Performance in cooking tests, good. 2

Westinghouse, Cat. No. R.R.A.-4 (Westinghouse Electric & Mfg. Co., Mansfield, Ohio) $23.95. 1150 watts, 115 volts, a-c only. Large rectangular inner container, enamelware, 16¼-qt capacity. Polished aluminum-alloy cover. Glass dishes. Most expensive of the 5 roasters tested in cost of operation (due in part to large size). Better than average in thermal efficiency. Satisfactorily met radio interference tests; but performance of electrical insulation was unsatisfactory and in this and in accuracy of temperature control by the thermostat, ranked lowest of the 5 tested. Performance in cooking tests, good. This model, on account of its large size and high electric power consumption, would be an uneconomical choice when intended for use with small quantities of food. 3

Automobile Gasolines and Crankcase Oils

THE SUBJECT OF GASOLINE AND OIL for automobile use is a larger one than can be adequately set forth in the small space here available. For the reader who is interested in a wider knowledge of the questions involved, CR has in preparation a revision of *Special Bulletin* "A Consumers' Study of Automobile Gasolines and Lubricating Oils." This will contain a full discussion of the properties of both gasolines and oils, and the latest information on the changing of crankcase oil. It is a valuable addition to the information given in the following report. This *Bulletin* will be available shortly at 25 cents the copy. Subscribers who desire to place their orders may do so, and the *Bulletin* will be sent as soon as it is ready (the date of issuance cannot yet be determined).

Gasolines

There are now a sufficient number of non-leaded gasolines on the market so that those who can use such fuels in their cars are strongly advised to do so (and at the present stage of engine development those who can use non-leaded gasoline will be decidedly in the majority). The hazard to one's self and others of using a gasoline containing the poisonous tetraethyl lead should not be minimized. Those not aware of the very real hazard involved in the wider extension of the use of leaded gasoline may refer to CR's *General Bulletins* of January, 1934 (25c), and April, 1936 (25c) which give important information on the question. There are other *Bulletins* which give additional information. Those subscribers who are unable to purchase non-leaded gasolines in their localities should inform their service station attendants of their desire to buy this gasoline, and, at the same time, write to the principal marketers of gasolines in their region, expressing their insistence upon the right to buy the safer, more economical, non-leaded gasoline.

Tetraethyl lead is added to the gasoline for the purpose of increasing its antiknock value, in other words, to minimize the tendency of the engine to knock under heavy load. Advertising and publicity stories in the newspapers have shrewdly propagandized for the belief that a gasoline which produces a slight knock, or ping, in their engine is not a suitable fuel for their car. This, however, is an erroneous impression. When an engine is knocking, actually the maximum horsepower is being produced. This knock occurs when the motor is slowed down on a hard pull, with the throttle almost fully open. Only when such knocking is considerable, and under severe and exceptional circumstances, will there be any danger of harm to the engine. (It is true, however, that modern tendencies in engine design have increased considerably the hazard to the car from pronounced and excessive knocking.) The limit to which the majority of the present-day cars can be adjusted is for a gasoline having an octane number of about sixty. Thus, in the following ratings, any gasoline which is rated below "fair" in antiknock quality is considered of a grade below what should ordinarily be used, at least in recent models of cars. It is advisable to select the type of fuel best suited for your car, have the proper spark adjustment made, and either continue to use that fuel exclusively, or (unless for some reason it decreases in quality) another suitable fuel of approximately the same octane number. Actually, there is little difference in the resultant power obtained by different fuels with different antiknock qualities, *providing the proper spark adjustment is made in each case*, and the difference in performance is only a small fraction of the difference in cost between the better non-leaded fuels and the premium leaded fuels. (It is true that the adjustment of the spark is much more difficult under present conditions where the control of spark advance has been removed from the steering wheel and put under the hood where only a serviceman can conveniently reach it.) With rare and relatively unimportant exceptions, therefore, it will be best to use unleaded fuels.

In selecting gasolines for test, non-leaded samples were purchased, with one exception. The regions where they were purchased are indicated in parentheses immediately after the brand name: (E) sample bought in the East; (S) sample bought in the South; (PC) sample bought on the Pacific Coast; (MW) sample bought in the Middle West. Prices actually paid are shown, but not price ratings since the prices paid by consumers in the different states vary according to the taxes in force, and to the degree of competition, which has distinct regional characteristics. The following ratings of summer gasolines have been computed on the basis of their major performance characteristics judged by qualified experts on laboratory test data and antiknock values. All of the samples were found to be satisfactory in respect to absence of corrosive quality and gum formation, unless otherwise noted in the listings. It is important to note that CR cannot, and will not, rate any product *A* whose use presents

an unnecessary hazard to the consumer. Thus, the one leaded gasoline included receives only a *B* rating, though its characteristics were such that, had it not contained lead, it would have warranted an *A* rating. Ratings are cr 37.

A. Recommended

Acto Third-Grade (S) (Standard Oil Co. of La., 2134 St. Charles Ave., New Orleans, La.) 21.5c. Antiknock quality, fair. Below average in ease of starting; about average in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, about average.

Blue Sunoco Regular (E) (Sun Oil Co., 1608 Walnut St., Phila.) 14.5c. Antiknock quality, superior; this brand would, therefore, be serviceable in cars requiring high-octane fuel. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, somewhat greater than average; to crankcase dilution, less than average.

Champion Third-Grade (S) (Jackson Oil Co., Inc., New Orleans, La.) 19c. Antiknock quality, fair. Somewhat below average in ease of starting; better than average in acceleration. Tendency to vapor lock, and to crankcase dilution, less than average.

Charm Third-Grade (MW) (Pure Oil Co., 35 E. Wacker Drive, Chicago) 17.6c. Antiknock quality, fair. Somewhat below average in ease of starting; better than average in acceleration. Tendency to vapor lock, and to crankcase dilution, less than average.

Cities Service Third-Grade (E) (Crew Levick Co., 400 N. Broad St., Phila.) 17c. Antiknock quality, satisfactory. About average in ease of starting; better than average in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, about average.

Gulf Traffic Third-Grade (E) (Gulf Refining Co., Pittsburgh) 16c. Antiknock quality, fully satisfactory. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, somewhat greater than average; to crankcase dilution, less than average.

Tidex Third-Grade (E) (Tide Water Oil Co., 17 Battery Place, N.Y.C.) 15½c. Antiknock quality, satisfactory. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, somewhat greater than average; to crankcase dilution, less than average.

Union "76" Regular (PC) (Union Oil Co. of Calif., Union Oil Bldg., Los Angeles) 20c. Antiknock quality, superior; this brand would, therefore, be serviceable in cars requiring high-octane fuel. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, somewhat greater than average; to crankcase dilution, about average.

U.S. Motor Specification Third-Grade (S) (Sinclair Refining Co., New Orleans, La.) 21.5c. Antiknock quality, fair. Somewhat below average in ease of starting; better than average in acceleration. Tendency to vapor lock, and to crankcase dilution, less than average.

White Magic Third-Grade (PC) (Union Oil Co. of Calif.) 18.5c. Antiknock quality, fully satisfactory. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, and to crankcase dilution, somewhat greater than average.

B. Intermediate

American Regular (E) (American Oil Co., American Bldg., Baltimore, Md.) 15c. Antiknock value, superior; this brand would, therefore, be serviceable in cars requiring high-octane fuel. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, greater than average; to crankcase dilution, about average.

Blu-Green Third-Grade (PC) (Gilmore Oil Co., 2423 E. 28, Los Angeles) 18.5c. Antiknock quality, fair. About average in ease of starting; below average in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average.

Dixoline Third-Grade (MW) (Dixie Jobbers) 17.6c. Antiknock quality, fair. Below average in ease of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average. Slight corrosion.

Flash Third-Grade (PC) (Richfield Oil Co., Los Angeles) 18.5c. Antiknock quality, fair. Somewhat below average in ease of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average.

Flight Third-Grade (PC) (Standard Oil Co. of Calif., 225 Bush, San Francisco) 18.5c. Antiknock quality, fair. Better than average in ease of starting; below average in acceleration. Tendency to vapor lock, and to crankcase dilution, somewhat greater than average. Slight corrosion.

Green Streak Third-Grade (PC) (Shell Oil Co., 100 Bush, San Francisco) 18.5c. Antiknock quality, fair. Better than average in ease of starting; below average in aeceleration. Tendency to vapor lock, and to crankcase dilution, greater than average.

Indian Third-Grade (PC) (The Texas Co., 929 S. B'way, Los Angeles) 18.5c. Antiknock quality, satisfactory. Better than average in ease of starting; below average in acceleration. Tendency to vapor lock, and to crankcase dilution, greater than average.

Indian Third-Grade (S) (The Texas Co., New Orleans, La.) 21.5c. Antiknock value, low. Below average in ease of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, about average.

Jax Pep Regular (S) (Jackson Oil Co.) 20c. *Contained lead.* Antiknock quality, satisfactory. Below average in ease of starting, and in acceleration. Tendency to vapor lock, and to crankcase dilution, less than average.

Peerless Third-Grade (PC) (Signal Oil Co. of Calif., Alameda, Calif.) 18.5c. Antiknock quality, fair. Somewhat below average in ease of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average.

Salcedo Anti-knock Third-Grade (S) (Salcedo Distributing Co., Inc., New Orleans, La.) 19c. Antiknock quality, low. Below average in ease of starting; above average in acceleration. Tendency to vapor lock, and to crankcase dilution, less than average.

Sinclair Green Third-Grade (E) (Sinclair Refining Co., 45 Nassau St., N.Y.C.) 14.3c. Antiknock value, fair. Better than average in ease of starting, and in acceleration. Tendency to vapor lock, greater than average; to crankcase dilution, less than average.

Stanolind Third-Grade (MW) (Standard Oil Co. of Ind.) 17.6c. Antiknock quality, fair. Below average in ease of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average.

C. Not Recommended

Golden Arrow Regular (PC) (Mohawk Petroleum Co., 405 Montgomery, San Francisco) 19c. Antiknock quality, fully satisfactory. Below average in ease of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average. High gum content.

Gulf Coast Anti-knock Third-Grade (S) (Gulf Coast Oil Co., New Orleans, La.) 19c. Antiknock quality, fully satisfactory. Better than average in case of starting, and in acceleration. Tendency to vapor lock, considerable; to crankcase dilution, about average.

Metro Third-Grade (MW) (Socony Vacuum Oil Co., Inc., 26 B'way, N.Y.C.) 18c. Antiknock quality, somewhat low. Better than average in case of starting, and in acceleration. Tendency to vapor lock, somewhat greater than average; to crankcase dilution, about average. Slight corrosion.

Metro Third-Grade (S) (Magnolia Petroleum Co., New Orleans, La.) 21.5c. Antiknock quality, much too low. Below average in case of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, about average.

Metro Third-Grade (PC) (General Petroleum Corp. of Calif., Higgins Bldg., Los Angeles) 18.5c. Antiknock quality, low. Below average in case of starting, and in acceleration. Tendency to vapor lock, less than average; to crankcase dilution, greater than average.

Super Shell Regular (PC) (Shell Oil Co.) 20c. Antiknock quality, superior; this brand would, therefore, be especially serviceable in cars requiring high antiknock value. Better than average in ease of starting; about average in acceleration. Tendency to vapor lock, considerable; to crankcase dilution, about average.

White Gold Third-Grade (PC) (Associated Oil Co., 79 New Montgomery St., San Francisco) 18.5c. Antiknock quality, low. About average in case of starting; below average in acceleration. Tendency to vapor lock, about average; to crankcase dilution, greater than average.

Motor Oil

A recognized technical authority in the field of oil utilization is of the opinion that present-day oils of well-known brands are of such quality that the only important distinguishing characteristic from the consumer's point of view is the change in viscosity with temperature. This view is in substantial conformity with CR's own knowledge of the subject and means, in brief, that consumers greatly overestimate the importance of the differences, if any, between common, well-advertised brands of motor oil, in respect to which advertising is for the same general purpose as with cigarets—to establish, for business-getting purposes, belief in a difference where none of consequence exists. The following oils have been tested and rated on their degree of change in viscosity with changes in temperature. Oils rated *A* are, therefore, excellent in this respect; those rated *B*, about average; and those rated *C*, poor or very poor. Two brands were, however, rated lower than they otherwise would have been, because their actual viscosity was higher than that specified in their labeling.

It is interesting to note the lack of uniformity among oils of the same brand name distributed in different states, as exemplified by *Esso No. 3 Uniflo*. The sample purchased in the East was superior to the sample purchased in the South, although the latter was of high enough quality to receive an *A* rating.

Samples were purchased in various sections of the country in a similar manner to the gasolines; all were S.A.E. 30, unless otherwise noted. Prices given are per gallon, and ratings are cr 37.

A. Recommended

Esso No. 3 Uniflo (E) (Standard Oil Co. of N.J., 26 B'way, N.Y.C.) $1.40. **AA3**

A-penn (E) (A-penn Oil Co., Butler, Pa.; distrib. by chain grocery stores) 60c. **1**

Penn Medal (E) Cat. No. 28 EM 4503 (Distrib. Sears, Roebuck & Co.) 50c plus postage (5-gal can $2.48 plus postage). **1**

Wards 100% Pure Pennsylvania (E) Cat. No. P461 A 7391 (Distrib. Montgomery Ward & Co.) 49c plus postage (2-gal can 98c plus postage). **1**

Essolube (S) (Standard Oil Co. of La., 2134 St. Charles Ave., New Orleans, La.) $1.12. **2**

Golden Shell (MW) (Shell Oil Co.) $1.08. **2**

RPM (PC) (Standard Oil Co. of Calif., 225 Bush, San Francisco) $1. **2**

Esso No. 3 Uniflo (S) (Standard Oil Co. of La.) $1.56. **3**

Havoline (PC) Indian Refining Co., Inc., Lawrenceville, Ill.) $1.20. **3**

Mobiloil (MW) (Socony-Vacuum Oil Co.) $1.28. **3**

Opaline (S) (Sinclair Refining Co., La.) $1.20. **3**

Pennzoil (MW) (Pennzoil Co. Refineries, Pa.) $1.36. **3**

Quaker State (MW) (Quaker State Oil Refining Corp., Oil City, Pa.) $1.44. **3**

Triton (PC) (Union Oil Co. of Calif., Union Oil Bldg., Los Angeles) $1.20. **3**

B. Intermediate

Laclede (S.A.E. 40) (S) (Sinclair Refining Co.) 60c. **1**

Wear-Well (PC) (Distrib. Western Auto Supply Co., Calif.) 58c. Sample labeled S.A.E. 30, was actually S.A.E. 40. Would otherwise have been rated *A*. **1**

4 Star (PC) (Signal Oil Co. of Calif.) $1. **2**

Tydol (E) (Tide Water Oil Co., 17 Battery Place, N.Y.C.) $1. **2**

Weslube (PC) (Richfield Oil Co. of Calif.) 80c. **2**

Mobiloyl (S) (Magnolia Petroleum Co., La.) $1.40. **3**

C. Not Recommended

Aristo "Medium" (PC) (Union Oil Co. of Calif.) 60c. **1**

Gold Crest (E) Cat. No. 28 EM 4476 (Distrib. Sears, Roebuck & Co.) 34c plus postage (10-qt can 85c plus postage). **1**

Long Run (PC) (Distrib. Western Auto Supply Co.) 39c. Sample labeled S.A.E. 30, was actually S.A.E. 40. **1**

Wards Commander (E) Cat. No. P461 A 7349 (Distrib. Montgomery Ward & Co.) 32c plus postage (2-gal can 64c plus postage). **1**

Sunoco (E) (Sun Oil Co., 1608 Walnut St., Phila.) 84c. **2**

Soaps for Home Laundering

ADVERTISERS WOULD HAVE THE CONSUMER BELIEVE that every brand of laundry soap is "best." The advertising appeal may be to get rid of "dishwater hands," "tired Mondays," runs in the stockings, or dangerous bacteria. According to the flowery stories which the copymen write, their particular brand of soap acts in a way that is never anything less than magic. This advertising, like most advertising copy, is written to appeal to the reader's ignorance of the commonplace chemical realities of soap buying, rather than to give the significant facts. An interesting example of this quality of soap advertising is seen in the claims made for *Concentrated Super Suds*, about which it is said that "all cleaning [is] speedier and easier because it is soap made in *concentrated* form." Actually this soap had nearly the same soap content as ordinary *Super Suds* (if anything Super can be said to be ordinary), and the difference certainly would be far from satisfactorily accounting for the term "concentrated." Furthermore, in a test for washing effectiveness, the ordinary *Super Suds* rated about the same as the Super Super or *Concentrated Super Suds*.

Economy

Few advertisements give the consumer any idea of the economy of the particular brand of soap. Even the statement of "net contents," assuming it to be correct (which is not always the case by the time the product reaches the consumer), is not a satisfactory method of judging economy. Soaps often contain a large amount of water; in some cases as much as one-third of the weight is water, and only two-thirds or less is actual "dry" or effective soap content. It is obviously not economical to pay for any more water at the price of soap than is absolutely necessary. Certain soaps contain large amounts of air, which add to the bulk but do not increase the weight. For example, *Selox* is extremely bulky; from the size of the carton, it would appear to be very economical. Actually, its net weight was found to be approximately the same as that of *Kirkman's* Granulated Soap, which is sold in a container just half the size of *Selox* in cubic contents (see Fig. 2). Slack fill is also another means of misleading the consumer. Fig. 1 shows the slack filling of a box of *Sweetheart Flakes*.

(Fig. 1)

(Fig. 2)

Another thing which the consumer cannot see is the amount of "builder" present in the soap. "Builders" are usually alkaline substances, such as sodium carbonate (sal soda—washing soda), borax, silicates, etc., which enhance the action of the soap by softening the water and "cutting" the grease. They are particularly convenient where the soap is to be used in hard water, but have the disadvantage that they introduce a real danger of damaging silks, woolens, and colored fabrics, or of irritating the skin and spoiling the appearance of the hands. All of these effects increase directly with the amount of builder present. Some laundry soaps contain a small quantity of "filler" such as clay or chalk, a useless cheapener or makeweight.

Precautions in Laundering

If one launders frequently and uses the proper soap, the clothes will last much longer. Prompt laundering is fairly important since dirt often reacts chemically with the fibers of the fabric. Some kinds of dirt also attract additional grease and dirt, thus making laundering more difficult. More bacteria will be held in the clothes; dirty clothes thus

tend to harbor disease germs and moulds. Grease spots will often produce hard varnish-like masses if allowed to stand, and are hard to remove and may hasten decomposition of the cloth. Some kinds of oil or grease in overalls, for example, actually introduce a risk of spontaneous combustion. Perspiration is usually acid, but undergoes decomposition, becoming alkaline; the presence of perspiration in a fabric for a considerable period may permanently injure the fibers.

Wool differs from the other fibers in being sensitive to chemical abuses of all kinds, and must be very carefully laundered. It becomes plastic and swells in hot water, which renders it more susceptible to chemical damage. It also tends to shrink, particularly if rubbed or wrung out hard. Since wool is very susceptible to alkali, it should always be laundered with a pure soap free from builders. Even though it gives a "soft feel," soap should be thoroughly rinsed out of woolen cloth as it may damage the fibers. Wool is very sensitive to temperature—it should not be laundered at a temperature much higher than body temperature (about 100 degrees Fahrenheit).

Synthetic fibers, such as rayon, etc., often lose their strength when wet. In some of the newer fibers, this fault has been overcome to a large extent. With synthetic fibers, a mild soap (free from builders) and a moderate temperature are desirable. They should be handled carefully, wrung only very gently if at all, and dried without strain; do not stretch them with clothespins.

Silk is not as susceptible to alkalies as wool, but when wet it is more readily damaged by friction than wool. It should be laundered very carefully and wrung out gently. Mild soaps and a moderate temperature are essential for silk, particularly fine silks such as hose and lingerie. Silk is easily damaged by dry heat, too, and care should be taken not to dry it on a radiator.

Cotton and linen, being vegetable fibers, differ chemically from wool and silk; they are less susceptible to alkalies and may be washed at higher temperatures and with stronger soaps. However, they are definitely affected by alkalies, particularly at higher temperatures, due to the action of oxygen in the air on the fibers.

The optimum temperature for washing wool, silk, and synthetic fibers is about 100 degrees Fahrenheit (about body temperature); cotton, unless dyed, will stand a higher temperature—up to about 160 degrees Fahrenheit. Dyed cotton goods should be laundered at a lower temperature as fading is more liable to occur at higher temperatures. Soaps usually have optimum temperatures at which they are most efficient. These will vary with soaps of different chemical composition. Olive oil soaps, for example, are cold water soaps (relatively), while tallow soaps (particularly hydrogenated tallow) are hot water soaps. The former are less efficient in hot water and the latter less efficient in cold water.

Rinsing of the fabric is important. The first rinse should always be of the same temperature as the wash water. It should be soft water, if possible, so as to prevent formation of scum or gummy deposit on the fabric. The second rinse, however, should be ordinary water (if water softeners are used) to remove any excess of water-softening chemical.

In laundering diapers, they should be finally rinsed in boric acid solution (about one tablespoon of boric acid crystals to a pail of warm water) and loosely wrung out. The boric acid not only helps to render the diapers antiseptic but also neutralizes the ammonia in urine, which often causes irritation.

Soaps may be roughly divided into those without (or with little) builders—that is, soap without other detergents—and those which contain builders. Soap powder, according to Federal Specifications is not pure powdered soap, but soap with a minimum of thirty percent of builder (sodium carbonate). The alkalinity of the soap solution is important, as it is the free alkali which attacks wool and silk. Any soap, however free from "free alkali," is alkaline in reaction when dissolved in water, due to the water's causing formation of "free hydroxyl ions." Soaps containing strongly alkaline builders will be more alkaline in solution than purer soaps.

Fatty Acids

Soap is manufactured by the reaction of fat or oil with lye, which combines with the fatty acids present in the fat or oil. The type of fatty acids in the soap (due to the kind of fat or oil employed in the manufacture) is very important in laundering. In order to obtain maximum efficiency, the soapy solution used in laundering should be at a temperature above the solidification point of the fatty acids present in the soap. Soaps made of oils with fatty acids having a low solidification or melting point (cold water or low titre soaps) should be employed for low temperature laundering (such as laundering wool and silk), while those with a higher solidification point (hot water or high titre soaps) are more efficient at higher temperatures, such as used for laundering cotton.

The following ratings of soaps are based on chemical analyses, and with consideration of the product's compliance or non-compliance with Federal Specifications (except in the cases of chip and bead soaps with builders, for which there are no applicable Federal Specifications). In addition, tests were made for the solidification point of fatty acids already discussed, the amount of suds produced, and washing tests on specially prepared soiled cloth samples, to determine the detergency effect of each soap as measured by means of a photronic cell, used to determine relative whiteness of the washed fabrics. Detergency is the factor that mainly determines the laundering *effectiveness* of a soap. In all cases the prices given are not the prices per package but the cost per pound of dry soap content, which is the real index of what is obtained and eliminates confusion of the consumer due to a large water or air content, slack-filled boxes, etc. Subscribers should use this figure rather than the size of the box to judge economy.

Pure Chip and Bead Soaps

The chip and bead soaps which follow are pure unadulterated soaps of the type ordinarily used in the laundering of fine fabrics, silks, woolens, rayons,

and colored fabrics. These are laundry and general household soaps in their purest form; they will not harm the hands unduly, and on that account may be considered desirable for dishwashing.

A. Recommended

Kirkman's Soap Chips (Kirkman & Son, Inc., Brooklyn, N.Y.) Solidification point of fatty acids somewhat too high for best laundering of wool and silk. Ranked second in washing effectiveness. Quantity of suds produced, low. Cost per lb of dry soap, 19c. **2**

Lux (Lever Bros. Co., Cambridge, Mass.) Rated highest of the pure chip and bead soaps in washing effectiveness and quantity of suds produced. Cost per lb of dry soap, 29c. **3**

Ivory Flakes (The Procter & Gamble Co., Cincinnati) Ranked third in group for washing effectiveness. Cost per lb of dry soap, 30c. **3**

Ivory Snow (The Procter & Gamble Co.) Very similar in chemical composition to *Ivory Flakes*. Cost per lb of dry soap, 27c. **3**

Chip and Bead Soap with Builders

Soaps of this type should not be used for laundering colored garments, silks, woolens, rayons, or other fine fabrics (*no matter* what *the manufacturer may claim on the box*). They can, however, be used for "rinse" (soaking without rubbing) laundering of ordinary white cottons and, possibly, badly soiled silks and woolens in lukewarm water. This applies particularly to districts where the water is hard. These soaps are considered to be well suited for dishwashing, and as a substitute for soap powders (which are not the same as powdered soap) when the latter are found to irritate the skin.

A. Recommended

Selox (The Procter & Gamble Co., Cincinnati) High builder content. Ranked first of group of 14 in washing effectiveness. Quantity of suds below average. Contained rosin. Cost per lb of dry soap, 18c. **2**

Octagon Soap Chips (Colgate-Palmolive-Peet Co., Jersey City, N.J.) Low builder content. Ranked third of group of 14 in washing effectiveness. Quantity of suds about average. Cost per lb of dry soap, 18c. **2**

Super Suds (Colgate-Palmolive-Peet Co.) Rather high filler content. Ranked close to *Octagon* Soap Chips in washing effectiveness. Quantity of suds above average. Cost per lb of dry soap, large size 18c, small size 19c. **2**

Chipso (The Procter & Gamble Co.) Fairly low builder content. Ranked sixth of group in washing effectiveness. Quantity of suds highest of all soaps tested. Cost per lb of dry soap, 17c. **2**

Octagon Granulated (Colgate-Palmolive-Peet Co.) Ranked close to *Chipso* in washing effectiveness. Quantity of suds above average. Cost per lb of dry soap, 21c. **3**

B. Intermediate

Sweetheart Flakes (Manhattan Soap Co., Inc., N.Y.C.) Ranked eleventh of group in washing effectiveness. Quantity of suds below average. Alkalinity somewhat high. Cost per lb of dry soap, 12c. **1**

Oxydol Granulated (The Procter & Gamble Co.) Ranked ninth of group in washing effectiveness. Quantity of suds below average. Alkalinity somewhat high. Cost per lb of dry soap, 19c. **2**

Rinso (Lever Bros. Co.) Ranked close to *Sweetheart* Flakes in washing effectiveness. Quantity of suds well above average. Alkalinity somewhat high. Cost per lb of dry soap, large size 17c, small size 18c. **2**

B. Intermediate (contd.)

White King Granulated (White King Soap Co., Los Angeles) Ranked close to *Sweetheart* Flakes in washing effectiveness. Quantity of suds about average. Cost per lb of dry soap, large size 18c, small size 18c. **2**

Silver Dust (Gold Dust Corp., N.Y.C.) Ranked close to *Sclox* in washing effectiveness. Quantity of suds about average. Alkalinity somewhat high. Cost per lb of dry soap, 19c. **2**

Concentrated Super Suds (Colgate-Palmolive-Peet Co.) Somewhat high filler content. Ranked close to *Octagon* Soap Chips in washing effectiveness. Quantity of suds above average. Term "Concentrated" appears to be unwarranted; whence product could not receive an *A* rating. Cost per lb of dry soap, 20c. **3**

Kirkman's Granulated (Kirkman & Son, Inc.) Ranked close to *Chipso* in washing effectiveness. Quantity of suds below average. Alkalinity somewhat high. Cost per lb of dry soap, 20c. **3**

C. Not Recommended

Chipso Granules (The Procter & Gamble Co.) Rather high (relatively undesirable) filler content. Ranked lowest of group in washing effectiveness. Quantity of suds below average. Cost per lb of dry soap, 18c. **2**

Fels Naptha Soap Chips (Fels & Co., Philadelphia) Builder content below average. Ranked close to *Oxydol* Granulated in washing effectiveness. Quantity of suds below average. Contained rosin. Cost per lb of dry soap, 20c. **3**

Ordinary Bar Laundry Soaps

In general, this type of soap should only be used for laundering flat pieces, white cottons, and linens.

A. Recommended

O.K. (The Procter & Gamble Co., Cincinnati) Ranked third in washing effectiveness. Cost per lb of dry soap, 8c. **1**

Kirkman's Borax (Kirkman & Son, Inc., Brooklyn, N.Y.) Ranked second in washing effectiveness. Cost per lb of dry soap, 13c. **2**

Fels Naptha (Fels & Co., Phila.) Ranked close to *O.K.* in washing effectiveness. Cost per lb of dry soap, 14c. **2**

Octagon (Colgate-Palmolive-Peet Co., Jersey City, N.J.) Ranked fifth in washing effectiveness. Cost per lb of dry soap, 12c. **2**

C. Not Recommended

P & G White Naptha (The Procter & Gamble Co.) Failed to meet Federal Specifications. Alkalinity somewhat high. Ranked highest of the bar laundry soaps in washing effectiveness. Cost per lb of dry soap, 14c. **2**

White King (Los Angeles Soap Co., Los Angeles) Failed to meet Federal Specifications. Ranked lowest of group in washing effectiveness. Cost per lb of dry soap, 17c. **2**

Soap Powders

This type of cheap soap-and-builder mixture is intended for rough general housework, such as cleaning floors, or for the laundering of coarse garments, such as overalls. It must contain not less than 30 percent sodium carbonate to meet Federal Specifications. The high soda ash content makes

such powders pretty hard on the skin, consequently, for many people, they are not suitable for dishwashing unless rubber gloves are worn.

B. Intermediate

Gold Dust (Gold Dust Corp., N.Y.C.) Statement on carton "has all desirable cleansing qualities in a perfectly harmless and lasting form" not even approximately true. No soap of this type can be considered "perfectly harmless." On account of the important character of this misrepresentation, the product could not receive an *A* rating. Cost per lb of dry soda-and-soap mixture (ratio 2 to 1). 9.6c. **3**

The Economics of Consumption—A Book Review

THIS NEW BOOK, *The Economics of Consumption*, by Charles S. Wyand (Macmillan, 1937, $3.50) puts into a well-organized form the basic theories of consumption now current, and includes a wealth of materials which have been scattered and hard to get at. Large numbers of concrete facts are given, and references to sources and to other work on consumption are clear and easy to use. One charm of the book is its quiet irony. Wyand appears to imply that ethics and social desirability are not a part of economics, yet he draws conclusions involving such considerations without hesitation, as an economist must if his work is to have any relation to the world in which real people live and move.

His statement of the need for consumer information is masterly. Without such information production is in the fix of a man looking for a black cat in a dark room. The waste of making unwanted goods and then creating the want, is made clear. The tone of the book is scholarly and calm, free from any hysterics of style. The book is distinctly for those who already know that so far as the consumer is concerned this is a long way from being the best of all possible worlds. Assuming a degree of knowledge on that head, the author deliberately pulls his punches, by using unemphatic and scholarly words instead of the stronger expressions that seem at times to be demanded. Nevertheless, Wyand does not mince words nor hesitate at arriving, when the facts require it, at strong conclusions.

"Altruism in rags is rare" (page 7) is not the usual experience. The charity of the poor is notable. Of course it is not confined to them, nor is it their most notable characteristic. Human impulses depend far less, in this reviewer's opinion, than Wyand would make it appear, upon personal economic status. His discussion of barter does not seem fully satisfactory. Barter differs from exchange through money much more than the text concedes. With the invention of money, society arrives at the scheme of interest on a percentage basis, a market for securities, monetary standards of living and financial management. Without money, rigidity in wages and salaries, debts or prices, is next to impossible.

The fine description of conflict of interests is marred by an indorsement of Rorty's idea that "judgments of ethical values are inapplicable." This seems to me to be conceding too much. Business men engaged in bilking customers rightly enjoy the sight of economists making such excuses for unbusinesslike conduct. There is a good deal of evidence that desperate men are no more ignorant of considerations of ethics than the same men when they are not desperate. Being one's own policeman is a hard test of anyone's honor.

The concise statement on page 20, that consumer knowledge is a necessity both to lessen business risk, loss, and waste, and to get usable products, should be broadcast. It is in the treatment of this section that the key-note of the book and its importance to social-science thinking may be found.

Chapter Two treats of the troubles which come from attempts to keep up scarcity, with an introductory contrast of scarcity economics. Hysterical style changes, forcing useful goods out of use (obsolescence), poor quality, "rigid" prices, and collusion in fixing sales terms—all come from some form of restricting or controlling production.

Wyand traces the various attempts at expansion of purchasing power, and their frustration. With abundance and scarcity in patches, we seem doomed to a patchwork economy. Is consumer-oriented production, as Wyand seems to hint, a sufficient answer? Or will a complicated set of doles, applying to each product as it gluts the market, shutting off new production till old stores are used up, with compensation to those laid off, become necessary? Or would a scheme like this be too much for the kind and quality of administrators we are likely to have in future New and Newer Deals?

The profit system, without some way of gearing it to consumer wants and needs, seems naturally unfitted for any but scarcity products. Attempts to widen its scope, especially in ignorance of consumer wants, cause an actual surplus of losses over profit, as in 1935. The destruction of needed goods to raise prices brings Wyand to the point of a new but unspecified economic order. It is enough to.

The chapter on "Consumption in a Changing World" might well be entitled "Hindrances to Abundance." The most vexatious, including peak and seasonable operation, style changes, and competitive wastes, are listed. Lack of income, and technological unemployment are given due weight, which is unusual.

The section on profits does not convince this reviewer. A balance left over, whether profit or a government subsidy, is required to stay in business. So is air. Yet air is not touted as the chief business motive. Healthy legs and heart are needed for access to many libraries, yet healthy legs are not the main driving force of the bookworm. Social status, good support for the family, fun with profits or other funds, power, the delight in a tough game calling for acute use of many faculties, the desire to be in a position to give things away—these are

the things that make men go after profit or even after the wages of management in an unsuccessful enterprise.

Greed is as bad as Morgan (page 78) thinks. It upsets every reasonable balance and it is over-stimulated by a "profit economy." But it may flourish anywhere, from co-op to trade union to poorhouse to a charitable foundation, as greed for money, power, perquisites, or merely recognition. Wyand gives a good statistical case for the economy of operation of large-scale units. Yet from the consumer's point of view many of his worst complaints are against excessive bigness. Inveterate and consistent misuse of advertising, excess finance costs and abuse of monopoly position seem almost to nullify any social usefulness of behemoth business. Small private electric plant operation is now worrying the big utilities, and the chains are not in a one-way fight, in spite of all the legal favors that they have gotten, or taken, in the past.

The chapters Five, Six, and Seven are critical reviews of many marketing and advertising studies, with a good deal of half-sportive comment. The pioneer services of extravagance in making luxuries popular, are ignored. Consumers' goods are distinguished from producers'; the necessity, comfort, luxury classification, is politely spoofed. Propaganda for weak wants is described in many isolated sections. The "Philosophy of Choice" (pages 126-129) brings up the old religious argument of Fate against Free Will. We cannot believe either, but we have to believe a little of both. The note on page 119, that "choice is . . . a little-understood phenomenon," still stands. But we do know enough about it not to be swindled all the time, though not enough to escape entirely.

Buying motives as discussed by Wyand are largely those of the marketing texts, and trace back largely to MacDougall's *Social Psychology*. Motives tending to discourage purchases, which include boredom, disgust, contempt, antagonism, indifference, suspicion, disbelief, preoccupation, and others, are hinted at but not listed. Buying appeals and suggestions are treated in a way that will aid the discerning consumer to build up resistances to them in those very places where his defenses are now weakest.

The discussion of factors affecting choice is the best that I have seen. The determinants listed on page 174, including sense percepts, psychic factors (memory, imagination and association), racial influences, sex differences, habit, custom, and the other factors listed, are woven into a coherent network. In the discussion of personal factors, sex influence (page 185, "Unless women have an interest bigger than themselves they buy clothes") is shown in action; there are also height, weight, complexion, and a sense of the harmony of clothing sometimes found in unexpected places. Chapter Eight has the facts about the factors of choice and applies them to current needs.

The limits of consumption, biologic, physical, and economic, and the way they force choices are treated in Chapter Nine. Business cycles and the market setup are briefly sketched. Plans for balance are hinted at obliquely. Factual evidence that Russia and Italy have solved the problem is lacking, probably because they have failed, as we have also, to find a better solution. The Consumer number of the *Annals** (May, 1934, an important reference) gives a brief digest of the law relating to responsibility of sellers and dealers for harmful or misrepresented products. Fraud, breach of warranty, and negligence are the three grounds given for recovery. If it were not for the common law's allowing puffery, these might be sufficient. But as it is and with the great breach in the law permitting exaggeration and overstatement as matters of course, presumably because the seller rates higher with government than does the buyer, the matter seems almost to depend on chance.

The discussion of Consumers' Research and the cooperatives is as fair as I have seen, and says some important things about the cooperative movement and its chances of serving the consumer effectively. Reasons are given to show that cooperatives do not offer "an apparent practicable solution to the consumers' most pressing problems, nor a program which human experience can justify." Pungent and full of meat, is the important chapter on "Commercial Manipulation of Choice." It should start many a student toward an understanding of the ingenious and ever-present devices which are used to sell him what he does not need and charge him more, and more often, than he would normally pay if he understood the seller's offering and the distinctions and claims made for it. The mechanisms of brands, price appeals, misleading credit terms, free deals, contests, advertising misrepresentation—all of these are compactly but definitely discussed, preparing the way for the chapter on "Consumer Standards." There is a particularly full and careful treatment, extending over two chapters, of private and governmental agencies affecting choice; and the deficiencies of government enterprise in dealing with the consumer's rights are well stated, with especial attention to the New Deal's window-dressing efforts to serve the consumer through various "watchful" and endlessly-waiting consumer agencies, which never succeed in breaking through the vigilant guards of boards, commissions, and governmental press agents.

Chapter Fifteen puts the consumer in his place —on pins and needles. But I doubt if the "assumptions" the American enterpriser operates on (page 437) are very widely held; in a practical sense they do represent the prejudices, customary among many of our people, of the concepts underlying freedom, and to a degree some business men give support to them in cases where they work to their own advantage and oppose them in cases where they work to the advantage of the consumer or a competitor. Many restrictions besides available capital are enforced on entering some lines, and more ought to be (technical competence, for example, and a knowledge of toxicology before entering the field of food, drug, or cosmetic manufacture). Talk of competition leaving only the "fit" in business is

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merely one way of defining "fit." Most enterprisers distrust competition itself. They feel that it opens the way to rascals. "If the other fellow were honest, I could be too," is the cry. And no one feels that he is responsible personally for what comes to him or escapes him in seeking his own economic welfare. He gets what he can—profits, doles, salary, hand-out, or the coup de grace, as may be. This is biologic, not economic, individualism. If he fails, he blames the government, competitors, customers, the weather, explosions, legacies, the AAA, and the nature of things; and quite likely one or a number of these things is to be credited or blamed for a part of the consequences. The estimate of 25 percent faddish goods and of the bad effects of poor goods and foolish choices on consumers is well documented.

Part Four distinguishes levels (actual consumption recorded), standards (consumption people fight to attain), and norms of living (that seem reasonable to authorities). Their expression in money terms has no set relation to the actual use or usefulness of the goods bought. Home-grown food (large in cash incomes under $600) cannot show in them. And the "proper amount" a family should spend on school, play, or sociability depends on the family's interests and age, sex and health, culture and activities.

The increase of 40 percent in purchasing power from 1892 to 1931 is gently deflated by the mention of increased wants and poor goods. Wagner's "Simple Life" is quoted on the reality of plain living but good. The "American Standard" is shown up as too costly for most, and uncomfortable or demoralizing, capable of leading many, through overstimulation by the example of advertising, the movies, and high-flying friends and relatives, to petty crimes, fraud, theft, and endless going into debt. Wyand predicts that a simple, more enjoyable standard will have to be worked out, and that arrangements must be made for the mass of the people to attain it.

The consumer goals are set out, (1) honesty in selling, (2) correct, to-the-point information, (3) less distribution waste, (4) less government bolstering of high prices, (5) plenty of goods we want, and (6) no high-pressure selling. These are pitted against the puffery, political favors to dealers, profit-mindedness, consumer ignorance and indifference, and vagaries of demand.

Remedies suggested are made to look matter-of-fact and merely "reformist" in spite of their thoroughgoing implications. Oscar S. Cox's Department of the Consumer statute is recommended as a beginning and is printed in the appendix. Norton and Douglas are quoted for a wage increase by heavy profit taxes, but the common objection that this will not do the job and will put 50 percent of those now in business out is delicately broached. The heavy barriers in the way of service to consumers by the State, and the urgent necessity that those barriers be surmounted, are put forward in a quotation from Schlink.

The author urges consumers to take up the burden and see that they get what they want—though technical training (or, at the minimum, a readiness to accept the findings and judgments of non-commercial, unbiased experts as of a different order of truth and significance from the mere biased claims or publicity of sellers), is really needed for that. Such perception of the difference in reliability between what is being paid for and that which is unpurchasable is often a quality of mind in the consumer which itself almost verges on technical skill and competence. A mail-order researcher's advice goes so far as to suggest consumer militancy, criticism of salesmen's science, buying on standard labels, kicking at ads that lie, and department store test laboratories. Doing without unwanted service, and emphasis on quality and durable satisfactions rather than quantity and novelty are stressed by Wyand, who seems to pin his faith to the growth of consumption economics.

This book emphasizes the essentially personal nature of the problems of consumption. It is a storehouse of facts and ideas. Its author's method somehow recalls the work of Thorstein Veblen, but is shorn of his eccentricities, dramatizations, and overemphases.

MAC H. DONALDSON.

Corrections to:

Annual Cumulative Bulletin issue of September, 1936

Col. 268 Furniture References: The name of the second author of *Your Money's Worth in Furniture— Exten. Bul. 297*, is Charlotte W. Brenan (not Brennan).

Col. 365 Washing Machines, *National Watermatic:* Delete statement that agitator head is not removable. A sharp blow in a counterclockwise direction with the palm of the hand releases it, and it then can easily be removed.

Consumers' Research Bulletin issue of February, 1937

Page 22 Automobile Heaters: Change address of manufacturer of *Super* Heater to Super Heater Mfg. Co., 2408 N. Front St., Phila.

issue of March, 1937

Page 12 *Bendix* Power Brakes: The price of $45 installed applies only to the equipment for the trailer. The brake control equipment for the towing vehicle is $12.50 to $16.50 extra, plus an installation charge averaging from $5 to $15 depending on the car.

Please make note of these items next to the statements they are intended to modify or correct.

Mechanical Refrigerators

SINCE CONSUMERS' RESEARCH FIRST BEGAN making tests of mechanical refrigerators a number of years ago, manufacturers have succeeded in improving their product so as to provide considerably more reliable and economical refrigeration. At the expense, of course, of earlier users of electric refrigerators, some of the less efficient and less durable makes have disappeared from the market; the mechanical defects of some others have been discovered, and corrected. That is not to say that gadget makers have turned *their* talents to more important ends, for they, too, have found many diversions to keep them busy. They have produced "defrostajars," gliding shelves, reversible freezer doors, two-way door latches, 16-point (even 18-point) lighted cold controls, and "aerators." Crosley Radio Corporation has just achieved the feat of combining a refrigerator with a radio. Since radios are now installed in kitchen ranges, it would seem that it only remains for the manufacturers to combine them with the kitchen sink in order to have a completely radioized kitchen. The next step may be to sell sound proofing, or "magic ears," or something of the kind, so that the house will remain habitable when the radios are all playing. It is a helpful note in this year's report that the substantial accomplishments of the engineers have enabled the refrigerator manufacturers, in many instances, to make progress in catching up to the intangible and verbal achievements of the advertising men luring the consumer to ever new heights of refrigerator marvels with such names as "Electrosavers" and "Econophase Vacuum Units." Improvement in the average performance of the newer models is not, however, of such significance as to make it prudent for the consumer to discard or to exchange an old model which is still doing its job of refrigeration satisfactorily.

Although differences in operating costs between the latest models of refrigerators are likely to be less than the differences found by CR in earlier tests (which is in keeping with the gradual improvement in the design of refrigerators) the consumer may still lose a considerable amount of money by choosing a refrigerator of the wrong make, with high operating costs. Operating costs of most of the refrigerators in this new test, at an average rate for electricity of 5 cents per kilowatt-hour, would probably exceed by only $2 or $3 per year the operating cost of the most economical refrigerator of the group (as compared with many times this difference found in earlier tests), but for the *Grunow* refrigerator, which was the least efficient one tested, this excess cost might, under average conditions, be doubled and would then amount to 4 percent of the initial cost of the refrigerator per year. The majority of the refrigerators tested might be expected to consume from $1.40 to $1.75 worth of electricity per month, when the charge for electricity is 5 cents per kilowatt-hour. (The costs at any other rate for electricity can be computed by simple proportion. In computing costs of operation in last year's tests, CR used a kwh rate of 6c—which at that time was close to the average rate.) It should be noted, however, that none of the refrigerators in the present group was the equal in economy of consumption of electricity, of the *Frigidaire* which was tested last year.

It must be remembered that cost of operation in ordinary household use cannot be precisely measured, or computed, because conditions of operation vary widely. Weather, the conditions in the particular kitchen, the constancy of voltage supply, and differing individual methods of use of a refrigerator, have an effect upon the cost of operation.

Operating Costs per Month (*Approximate*).		
	Kelvinator K4-37	$1.30
	Hotpoint and *Stewart Warner*	1.40
	Leonard LS-50	1.50
	Kelvinator KS-60 and *Gibson* S-57	1.55
	Crosley HB 5-50	1.60
	Grunow 53W	1.85

One factor in the operation of a refrigerator which affects appreciably what one has to pay, is the extent to which the refrigerator is used for making ice cubes. The greater the amount of water frozen, the more one has to pay the electric power company, *and the sooner one will have to buy a new refrigerator.* An electric refrigerator will make, on 5 cents' worth of electricity (one kilowatt-hour), from ten to twenty pounds of ice, but, in doing this, the mechanism will have to run as much as it normally would in twenty-four hours without freezing any ice cubes. In other words, making ten to twenty pounds of ice, not only adds to the power bill, but also may be expected to reduce by something like one day the useful life of the refrigerator, and hence, to cost another 4 or 5 cents in terms of depreciation of the mechanism (assuming a refrigerator has a life of ten years, which seems a fair estimate on present information). Adding the charge for depreciation to the charge for electricity, the total cost for ice arrived at appears to be not much different from what one would have to pay an ice company for it. From the standpoint of convenience, however, and the factor called "readiness to serve," it must be conceded that the advantage is well over on the side of the mechanical refrigerator.

Another important factor affecting the cost of operation of the refrigerator is the degree to which the inside temperature is maintained below that outside. The colder this inside temperature is in relation to the temperature in the room, the more the refrigerator costs to operate. If the average interior temperature, for instance, is kept at 40 degrees Fahrenheit (an unnecessarily low figure) instead of 44 degrees Fahrenheit (a reasonable figure), the amount of one's bill for electricity may be increased by 35 percent. Moreover, the expense for depreciation, which, as just seen, is an important item in the total cost, must also increase as the cooling load on the refrigerator is increased. Temperature inside the refrigerator, therefore, sufficiently affects the cost of operation to make it worth while to read a thermometer occasionally, and to see that an unnecessarily low temperature is not being maintained.

High room temperatures, dust blocked con-

densers, and a thick coating of ice in and on the evaporator also contribute to increased operating costs. The dust should be cleaned out of the condenser every six months (wiped off with a rag, where this can be done), and the frost on the evaporator should never exceed one-half inch. A one-quarter-inch limit would be better.

Since the changes which have been made in the makes of refrigerators included in recent previous tests by CR have not been such as to indicate a need for obtaining a new basis for rating them, the models chosen for testing this year, constitute, with one or two exceptions, a group of refrigerators not previously included in CR's tests. They are, nevertheless, sufficiently well known and widely distributed to have prompted inquiries from many of our subscribers, and it is in deference to subscribers' wishes in this respect that we have selected the present group for test rather than making new tests on new models of some of the makes previously studied. In addition to the six refrigerators tested by CR, this report includes also the conclusions on tests of two *Kelvinators*, which were selected and tested by an independent commercial laboratory, believed by CR to be honest and competent in the technical matters involved, by methods agreed to in advance by CR. It may be of interest to note that Kelvinator Corporation is the only refrigerator manufacturing concern which at its own instance has shown a willingness to submit its product to investigation by an independent laboratory, and to make the findings available to CR under the conditions which are set down in the *Introduction to Consumers' Research*, which include, of course, the use of the data by CR, whether or not the conclusions turn out favorable to the product. For the *Kelvinators*, expenses of the tests and of furnishing the machines, which remained Kelvinator's property, were borne by the Kelvinator Corporation; the tests were carried out at Kelvinator's own instance, and the laboratory's findings were directly supplied to CR, in full. The laboratory used, which is the most important commercial electrical testing laboratory in the United States, has, in the past, conducted some of CR's own refrigerator tests; its competence is unquestioned and its data are widely accepted as representing work of men of high integrity.

As CR has pointed out in a previous refrigerator report, manufacturers often have third-line or "economy models" (differing in no essential way from more expensive "standard models"), which are kept hidden from a prospective purchaser while the salesman tries all his tricks for enticing the consumer to part with as much of his money as possible for one of the highest-priced models. Much of the manufacturers' advertising literature fails to show the cheaper models, and the consumer who wishes to be thrifty has to be a little aggressive, perhaps, in his conversation with the salesman.

More expensive than the "standard models" are the deluxe models, designed to intrigue the gadget-loving housewife. The exterior porcelain finish generally to be found in these models is probably worthwhile in very humid climates (for instance that of Panama or a southeastern seacoast region) on account of its greater resistance to deterioration, but, usually, for the average consumer, is deemed not worth the additional $30 or $40 charged for it. All who know mass production methods will agree that that is a fancy sum to pay a refrigerator manufacturer merely for the application of a more durable finish.

Compressors used in refrigerators are either of the sealed or open types. Sealed compressors, which are being adopted by manufacturers in increasing numbers, are quite generally (and rightly) opposed by men who make their living servicing refrigerators. The sealed unit has the motor and all working parts sealed within a case, so that a stuffing box around the compressor shaft can be dispensed with. The chances for a leak of the refrigerant are thus reduced. Electric wires enter the case by means of a pressure-sealed joint. With the *General Electric* and *Hotpoint* refrigerators, this joint is a seal of glass to metal, and offers little chance of leakage of refrigerant. Corresponding seals of other refrigerators usually consist of a bushing of moulded resin, and leaks from the refrigerator into the room are more likely to occur. While sealed units require less frequent repairs than open units, they have the disadvantage that when repairs are required, the unit will have to be sent to a special repair shop having special equipment of the factory type. Such equipment, of course, puts the special repair shop in a monopoly position where it can charge larger prices (even though its cost may be lower because of the large-scale, special character of its tools and machines) and may greatly lengthen the time the refrigerator is out of use during repair.

The refrigerators in this report were tested according to the standard procedure described in the latest revision of the Test Code for Mechanically Operated Household Refrigerators, of the National Electrical Manufacturers Association. In addition, they were given an endurance test run under severe conditions of temperature and relative humidity, and were tested for safety of electrical insulation, for comparative noise in operation, and for resistance of the interior porcelain enamel to food acids. None of the refrigerators included in this test showed the relatively large decrease in efficiency during the endurance test that was found in a number of instances in CR's earlier tests. Electrical insulation was found to be of satisfactorily high performance in all cases. CR has reported on the relative hazards of the various refrigerants used, in an earlier (1934) *Bulletin*.

Shelf area has been measured, and included in the description of each refrigerator, since, in conjunction with interior volume, it gives an indication of the amount of food which can be stored in the refrigerator. The reader will be interested, perhaps, in comparing Crosley's advertising slogan "this much more in a *Shelvador*" with actual shelf-area measurements. He will very likely have been led by some of the Crosley advertisements to expect a huge increase in the storage capacity, whereas actually the shelf area of this refrigerator is increased by the six shelves in the door, by the relatively insignificant amount of perhaps 10 percent. Two other refrigerators in the test had larger total shelf areas, but also had somewhat larger interior volumes.

Refrigerating capacity (cold-maintaining ability under severe conditions) of all refrigerators tested

was found adequate. Prices given in the listings are approximate retail prices, which vary slightly from locality to locality. Values given for capacity and for shelf area are those obtained by actual measurements in the laboratory; they differ in some instances from the values given by the manufacturers in their advertising circulars. In most cases where a difference was found in cubic foot capacity, the manufacturer has erred in the direction of overstatement. Upon inquiry from CR giving the model numbers of the refrigerators, Underwriters' Laboratories were unable to state whether or not the refrigerating units were among those approved by them. Information on such approvals (which is believed by CR to be of only limited value) has, therefore, not been included in the listings. All ratings are cr 37.

A. Recommended

Crosley Shelvador HB 5-50 (Crosley Radio Corp., Cincinnati) 5.0 cu ft capacity, 11⅔ sq ft shelf area, $149.50. Sealed reciprocating compressor. Relatively quiet in operation. Refrigerant, dichlorodifluoromethane (*Freon*). 2

Gibson S-57 (Gibson Electric Refrigerator Corp., Greenville, Mich.) 5.0 cu ft capacity, 10 sq ft shelf area, $159.50. Sealed reciprocating compressor. Relatively quiet in operation. There was a slight dulling of the gloss and yellowing of the interior porcelain enamel by contact with grapefruit juice; not, however, considered an important defect. Refrigerant, sulphur dioxide. 2

Hotpoint 120EB51 (Edison General Electric Appliance Co., Chicago) 4.9 cu ft capacity, 10⅓ sq ft shelf area, $159.50. Sealed reciprocating compressor. Relatively quiet in operation. Some corrosion near joints of condenser found at end of endurance test. Refrigerant, sulphur dioxide. 2

Kelvinator K4-37 (Nash-Kelvinator Corp., Detroit) 4.3 cu ft capacity, 10 sq ft shelf area, $139.95. Open reciprocating compressor. The conditions of the test did not permit comparison of noise of operation of this make with that of the other refrigerators, but noise was independently judged unobjectionable. Thermostatic control of refrigerator temperatures not so good as the average of the group of 8 refrigerators tested; not, however, considered an important defect. Refrigerant, sulphur dioxide. 2

Kelvinator KS-60 (Nash-Kelvinator Corp.) 6.5 cu ft capacity, 14⅓ sq ft shelf area, $184.95. Open reciprocating compressor. The conditions of the test did not permit comparison of noise of operation of this make with that of the other refrigerators, but noise was independently judged unobjectionable. Thermostatic control of refrigerator temperatures not so good as the average of the group; not, however, considered an important defect. Refrigerant, sulphur dioxide. 2

B. Intermediate

Grunow 53W (General Household Utilities Co., Chicago) 4.8 cu ft capacity, 9 sq ft shelf area, $149.50. Sealed rotary compressor. The most expensive in operating cost of the 8 refrigerators tested. Relatively quiet in operation. Cabinet did not have the degree of rigidity deemed desirable. Slight corrosion of lower shelf found at end of endurance test. Refrigerant, methylene chloride (*Carrene*). 2

Leonard LS-50 (Leonard Refrigerator Co., subsid. of the Nash-Kelvinator Corp.) 5.2 cu ft capacity, 10⅓ sq ft shelf area, $156.25. Open reciprocating compressor. Relatively noisy in operation. A part of the mechanism vibrated through 1/7 in., largest range of vibration found. Thermostatic control of refrigerator temperatures not so good as the average of the group; not, however, considered an important defect. Refrigerant, dichlorodifluoromethane (*Freon*). 2

Stewart-Warner C-700 (Stewart-Warner Corp., Chicago) 5.7 cu ft capacity, 12⅔ sq ft shelf area, $159.50. Open reciprocating compressor. Somewhat noisy in operation, but less noisy than *Leonard*. Considerable vibration, about half that of *Leonard*. There was a slight dulling of the gloss of the interior porcelain enamel by grapefruit juice; not, however, considered an important defect. Refrigerant, sulphur dioxide. 2

Ice Refrigerators

IF YOU ARE TRYING TO DECIDE whether to buy an ice refrigerator or a mechanical refrigerator, do not let the vast barrage of advertising aimed at the public by either industry influence you in the least in your decision. Several millions of dollars are being spent yearly to broadcast statements compatible only with an advertising agency's peculiar state of ignorance about physics, and concepts of honesty in the use of words.

The Federal Trade Commission has instituted action against one of the leading ice refrigerator manufacturers for his misleading claims, but the final disposition of this case is still pending. Some of the statements which the Federal Trade Commission objected to were that a temperature of from 45 to 50 degrees (the lowest ice refrigerators provide at ordinary room temp.) is "an established or required standard temperature for the preservation of foods"; "foods kept in electric refrigerators lose water, or dehydrate, to such an extent that their nutritive properties are impaired"; that "foods kept in non-mechanical refrigerators do not dehydrate or lose water"; that "in non-mechanical refrigerators any poisonous gases formed from decay of foods are entirely absorbed by the water from the melting ice and are carried away through the drain pipes thereof," while "in electric refrigerators such poisonous gases . . . remain in the ice cubes."

The Federal Trade Commission has also prohibited the circulation of the *Mystery Book* of Home Research, Inc., containing ridiculously unscientific, false, and misleading statements concerning refrigeration.

CR investigated experimentally some of the claims made by the ice refrigerator industry as given, for instance, in the booklet *Why Ice Is Best for Refrigeration*, circulated by The Coolerator Company. This booklet invites you, after the manner of much pseudo science in advertising, to perform a little experiment; this experiment it is held will prove that odors are carried off through the drain pipe of an ice refrigerator, but with an electric refrigerator, remain to contaminate the food. You are asked to put some strong smelling substances such as wintergreen oil and onions, with some other food, in both an ice refrigerator and an electric refrigerator, and to note how badly the food kept in the electric refrigerator tastes and how free

from taint is the food in the *Coolerator*. It must be that the manufacturer relied upon the consumer's being too lazy or otherwise occupied, to perform this test (many so-called consumer tests recommended by advertisements do rely on just this inactivity on the part of the reader). Or perhaps a foreknowledge of the result that was supposed to follow was intended to prejudice the observer's findings in favor of *Coolerator's* method of refrigeration. At any rate, CR, after making this test, could discover no advantage whatever in favor of the ice refrigerator.

As to the comparative extent of dehydration of uncovered foods kept in the ice refrigerators and in electric refrigerators, tests which CR made showed, to be sure, a smaller loss of moisture from foods kept in the ice refrigerator. The results, however, failed to support the claim that the ice refrigerator does not "subtract . . . moisture content . . . from foods," and did not indicate that nutritive properties of foods kept in an electric refrigerator are destroyed and are saved only in an ice refrigerator. In four days, hamburger steak lost 12 percent of its weight in a *Vitalaire* ice refrigerator and a little over 17 percent of its weight in a *General Electric* refrigerator, and both samples were wholly satisfactory when cooked; the corresponding losses in fresh lettuce leaves which were spread out in thin layers over the shelves for the same period were 10 percent and 15 percent respectively, and both the ice refrigerator and mechanical refrigerator samples were wilted and unsatisfactory in flavor.

Ice refrigerators cost less initially than mechanical refrigerators, and have a lower depreciation cost. Due to universally poor design, and non-use of engineering knowledge by manufacturers of ice refrigerators, monthly cost for ice (at 60 cents per hundred pounds) for cooling an ice refrigerator will be, however, excessive. Indeed the cost of icing such a refrigerator will average from two to three times the cost of electricity (at 5 cents per kilowatt-hour) required for running a modern electric refrigerator of comparable size. The excess cost of the ice over electricity, at the relative ice and electricity prices assumed, will thus amount to at least $2 per month of ordinary operation, which should for anyone who can afford the higher initial cost of the electric refrigerator, more than offset any savings which the lower first cost of the ice refrigerator would imply. And in this connection it is to be noted that the two refrigerators tested were certainly superior ones of their class; it is wholly unlikely from CR's earlier studies in this field, that other makes, advertised or unadvertised, will be anything like as good as these two, in their performance and economy.

Neither of the two ice refrigerators included in the present test, *Vitalaire* and *Coolerator*, was able to maintain a temperature as low as 45 degrees Fahrenheit when in a room at summer temperatures. (They should do so, readily, of course.) Refrigeration obtained from these refrigerators (leaving out of consideration its cost per month), while better than that provided by most of the older ice refrigerators, is, therefore, not considered to be quite satisfactory. *Vitalaire*, by its ability to melt ice at a faster rate, maintained a temperature over 2 degrees lower than did *Coolerator*. Both refrigerators, although nominally having an ice capacity of 100 pounds, actually would hold 140 pounds of ice. Icing would be required only every four or five days during ordinary summer weather.

The listings are based on measurements on 1936 "models" but, judging by the ice box industry's past performances, it is believed that no significant advance in refrigerating performance will likely have been achieved in later "models," which came on the market after this test was begun.

B. Intermediate

Coolerator J-5 (The Coolerator Co., Duluth, Minn.) 5.2 cu ft capacity, 9⅓ sq ft shelf area, $68. Temperature maintained inside more than 2° above that in *Vitalaire*. Model L-8 at $84.50 appears to be essentially the same; specifications, though far from being clear, may indicate slightly thicker insulation in some parts. **2**

Vitalaire A-5SR (Ice Cooling Appliance Corp., Morrison, Ill.) 5.4 cu ft capacity, 9⅔ sq ft shelf area, $61. Corresponding 1937 *Vitalaire* is Model B5. **2**

"Buy Food—Not Tins"

"BUY FOOD—NOT TINS" is the slogan of a new type of store entering the market picture of the food industries. One of these is in Seattle, Wash. Called a Liquiteria, it handles liquid foods and household necessities in bulk. Here are a few examples of the prices: corn and cane syrup, 55 cents a gallon; imported virgin olive oil, $2.25 a gallon; 40-grain cider vinegar, 23 cents a gallon; peanut butter, 17 and 19 cents a pound. ("They're After Your Market," in *Food Industries*, January, 1937.)

As prices rise on trade-marked brands of food, due in some cases to resale price maintenance laws now in effect in many states, there will be new and ingenious methods devised for supplying consumers with products at low prices. Wherever it is found that these devices are effectively useful, consumers should rally to their support. Buying food—not tins and bottles, was the commonplace practice of all housewives and all restaurants a generation ago, when the *quality of food* (as distinguished from the elaborateness and attractiveness of packages) was infinitely better than it is today.

Contributors

E. KAESTNER is connected with the floor machinery and maintenance business. He has, nevertheless, in CR's opinion, written a valuable and dependable article on floor finishing, a subject on which there has been a serious lack of trustworthy information and upon which the opinions of experts, and interested industries, differ notably.

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Signs and Portents

TWO FALLACIES TEND TO CONFUSE us all on the price-wage situation. The first is the workman's delusion that higher wages in money necessarily leave him any better off. When prices are raised to cover his new wages, he frequently finds himself worse off. The other fallacy, even more widespread, is the notion that higher wages for industrial workmen necessarily make for prosperity. They don't—if prices rise as fast or faster, for the simple reason that industrial wage earners are a much smaller proportion of the market for consumers' goods in this country than is commonly supposed. Farmers, employes in the great business of distributing goods and millions of service employes are also consumers. Any one of these three classes is as important, consumer-wise, as the factory workers who are winning spectacular wage increases now. And one of the causes of the last crack-up was the fact that industrial wages and, consequently, the prices of things industrial workers made, got too far out of line with the incomes of the rest of the population. ("Today in America," by Raymond Moley, in *News-Week*, April 3, 1937.)

A number of pro-labor groups having names that suggest the functions of consumer organizations are loud in attempts to persuade consumers generally to support for humanitarian reasons any and all attempts of industrial workers to raise wages. As Mr. Moley very wisely points out, a rise in wages, particularly for only a portion of the general working and wage-earning population has, in the past, been a factor making for higher prices than consumers in general can afford to pay. Consumers, including small enterprisers, professional men and women, farmers, homemakers, will be wise, therefore, to examine closely such appeals to their sympathies which if uncritically supported may work hardships on the unorganized, inarticulate mass of consumers generally whose votes *ought* to count just as much as the votes of an equal number of factory workers.

IT IS INTERESTING TO WATCH retailers' organizations in the act of stimulating the creation of consumers' cooperatives to compete with retailers. That is what these organizations are unwittingly doing now.

They are pushing the Tydings-Miller price resale maintenance bill through Congress, and they have induced the legislatures of half the states to pass similar bills. Under the Tydings-Miller bill, a manufacturer will no longer be subject to anti-trust prosecution if he fixes resale prices in a state that allows him to do this.

But wherever he is allowed to do it, he will be forced to do it. That is the real object of these bills. He will be forced by retailers' threats of a boycott. They will demand excessive profit margins. The New York State Pharmaceutical Association, for example, demands that fast-moving items be marked up 39% of the retail price, and slow-moving items 50%. And the association says it "will use its utmost efforts to persuade" manufacturers to issue price resale contracts with these profit margins. ("How Retailers Help Consumers' Co-ops," in *Business Week*, March 13, 1937.)

The various resale price maintenance bills which are now being enacted in many states afford consumers' cooperatives a great opportunity, as this business journal shrewdly points out. Will they demonstrate that they are functioning effectively in the consumer's behalf by carrying goods of unequivocally high and maintained quality at reasonable prices below those of the price-fixed nationally-advertised brands, or will they show themselves to be just tired liberals "playing store" as one left-wing critic of co-ops puts it? It is to be hoped for the consumer's sake that cooperatives will not allow stores like Macy's to excel them in both intelligence and energy in the fight against the artificial pegging of high prices by resale price maintenance contracts.

PRESIDENT ROOSEVELT ON NUMEROUS OCCASIONS has expounded the New Deal theory of the relationship between high prices and prosperity. It seems now that he will have plenty of opportunity to observe the results of his theory as markets advance speculatively to new levels, which, in many cases, are almost up to 1929's astronomical prices.

Once before, under the operations of the NRA, he almost had an opportunity to observe the same phenomenon, but an unfortunate Supreme Court decision killed the guinea pig and deprived him of the opportunity of clinical observation just as the experiment became interesting.

A similar situation may be developed during the life of the present Congress. All the laws and enactments which formerly required higher and higher prices may, on the mounting criticism of consumers, be reversed. One may even see laws requiring that lower prices be instituted. It must not be forgotten that a price-minded administration could reverse itself. ("New Deal Reversal," in *Food Field Reporter*, March 22, 1937.)

Since the earliest days of the New Deal, CR has warned that the price-boosting, crop-destroying, pig-killing schemes of the brain trusters, if successful, would work to the grievous disadvantage of consumers. The administration's much sought price rise is here and, as was to be expected, it is being paid for by consumers who no longer accept such exploitation in silence. Now is the time to add your protest to the "mounting criticism" by writing your Senators and Congressmen of your disapproval of resale price maintenance, crop reduction, and price-raising laws like the Guffey Coal Act. You're going to foot the New Deal's bills in many ways, but you should protest to keep them from getting still larger.

"ESQUIRE" WILL RUN AN ADVERTISEMENT in its June issue in support of nationally-advertised brands and national advertising. The advertisement describes national advertising as, in effect, a sort of "society for the prevention of the plundering of the consumer," and concludes with the line, "What's in a name? Pretty nearly all that's fine." ("News in the Advertising Field," in the *New York Herald Tribune*, April 13, 1937.)

The advertising department of *Esquire* in their zeal to rescue nationally-advertised brands and national advertising from rapidly mounting consumer disfavor have somewhat distorted their Shakespeare. We were sure they were wrong but just to make certain that we were not indulging in mere prejudice, we consulted *Romeo and Juliet* (Act II, Scene 2) and discovered "What's in a name? That which we call a rose by any other name would smell as sweet." So prunes are prunes, whether they come in a big, brown paper bag or in a small fancy box labeled *Del Monte*.